

JVC

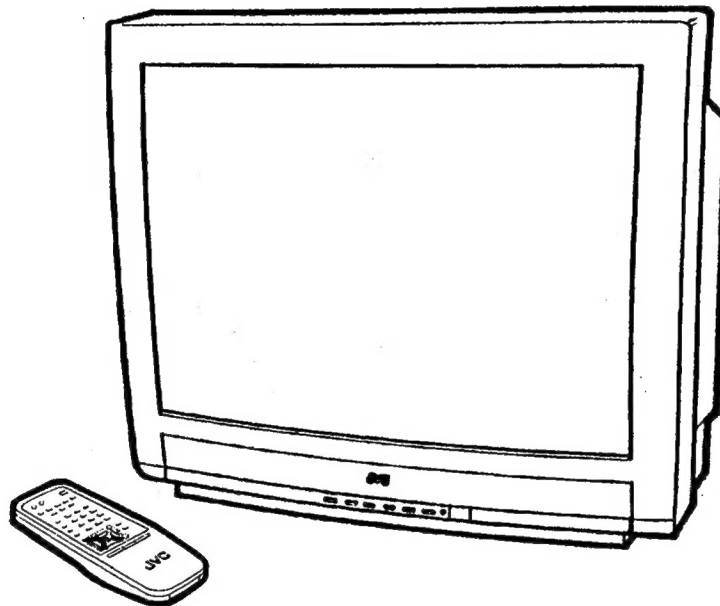
SERVICE MANUAL

COLOR TELEVISION

AV-27BP4_(US&CA)

BASIC CHASSIS

GX V



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SPECIFICATIONS

Item	Content
Dimensions (W×H×D)	25-3/4" × 23-1/16" × 20-1/2" / 65.5cm × 58.6cm × 52.0cm
Weight	82.9lbs / 37.7kg
TV System and Color, Sound System	
TV RF System	CCIR(M)
Color, Sound System	NTSC,BTSC (Multichannel Sound)
TV Receiving Channels and Frequency	
VL Band	(02~06) 54MHz~88MHz
VH Band	(07~13) 174MHz~216MHz
UHF Band	(14~69) 470MHz~806MHz
CATV Receiving Channels and Frequency (Quartz Synthesizer System)	
Low Band	(02~06,) by (02~06)
High Band	(07~13) by (07~13)
Mid Band	(A~I) by (14~22)
Super Band	(J~W) by (23~36)
Hyper Band	(W + 1~W + 28) by (37~64)
ULTRA Band	(W + 29~W + 84) by (65~94,100~125)
Sub Mid Band	(A-8, A-4~A-1) by (01, 96~99)
TV / CATV Total Channel	180 Channels
Intermediate Frequency	
Video IF Carrier	45.75MHz
Sound IF Carrier	41.25MHz (4.5MHz)
Color Sub Carrier	3.58MHz
Antenna Input Impedance	75Ω (VHF / UHF) Terminal, F-Type Connector
Power Input	120V AC, 60Hz
Power Consumption	147W (max.) ,103W (avg.) [US]
Input current	1.9A [CA]
Picture Tube	27"(69cm) measured diagonally, Full Square
Viewable Picture Size (W×H)	21-5/16" × 16" / 54.1cm × 40.6cm
High Voltage	31.0kV +1.0kV (at zero beam current) - 1.3kV
Speaker	2" × 4-3/4" (5 × 12cm) oblong Type, × 2
SP Terminal	6~8Ω
Audio Power Output	5W + 5W
Input (1,2)	Video : 1 Vp-p 75Ω (RCA pin jack) Audio : 500 mV rms (-4dBs), High Impedance (RCA pin jack)
Line Output	Video : 1 Vp-p 75Ω (RCA pin jack) Audio : 500 mV rms (-4dBs) Low Impedance (400Hz when modulated 100%) (RCA pin jack)
S-VIDEO IN	Y:1 Vp-p positive (negative sync provided,when terminated with 75Ω) C:0.286 Vp-p (burst signal, when terminated with 75Ω)
Variable Audio Output	More than 0~1550mV rms (+ 6dBs) Low Impedance (400Hz when modulated 100%) (RCA pin jack)
AV Compulink Input	Audio : 3.5mm mini jack VCR : 3.5mm mini jack
PIP/MAIN Audio out put	3.5mm Stereo mini jack
Tube	1
IC	21(In TV), 1(In Remocon)
Transistor	64(In TV), 2(In Remocon)
Remote Control Unit	RM-C671

Design & specification subject to change without notice.

SAFETY PRECAUTIONS

- The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
- Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
- Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (▲) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may create shock, fire, or other hazards.
- Use isolation transformer when hot chassis.**
The chassis and any sub-chassis contained in some products are connected to one side of the AC power line. An isolation transformer of adequate capacity should be inserted between the product and the AC power supply point while performing any service on some products when the HOT chassis is exposed.
- Don't short between the LIVE side ground and NEUTRAL side grounding or EARTH side ground when repairing.**
Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE (⊥) side GND, the NEUTRAL (↗) side GND and EARTH (⊕) side GND. Don't short between the LIVE side GND and NEUTRAL side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and NEUTRAL side GND or EARTH side GND at the same time.
If above note will not be kept, a fuse or any parts will be broken.
- If any repair has been made to the chassis, it is recommended that the B₁ setting should be checked or adjusted (See ADJUSTMENT OF B₁ POWER SUPPLY).
- The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.
- Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10k Ω 2W resistor to the anode button.
- When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

10. Isolation Check

(Safety for Electrical Shock Hazard)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

(1) Dielectric Strength Test

The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 1100V AC (r.m.s.) for a period of one second.

(... Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)

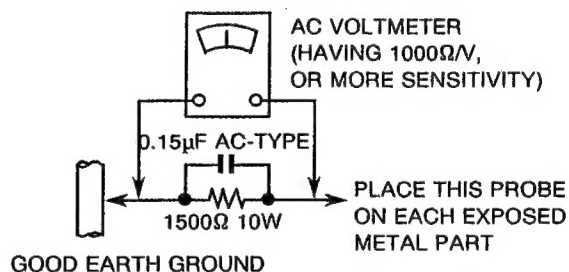
This method of test requires a test equipment not generally found in the service trade.

(2) Leakage Current Check

Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).

• Alternate Check Method

Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500 Ω 10W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.35V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).



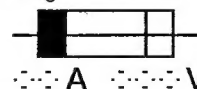
11. High voltage hold down circuit check.

After repair of the high voltage hold down circuit, this circuit shall be checked to operate correctly.

See item "How to check the high voltage hold down circuit".

■ ONLY CANADA

This mark shows a fast operating fuse, the letters indicated below show the rating.



FEATURES

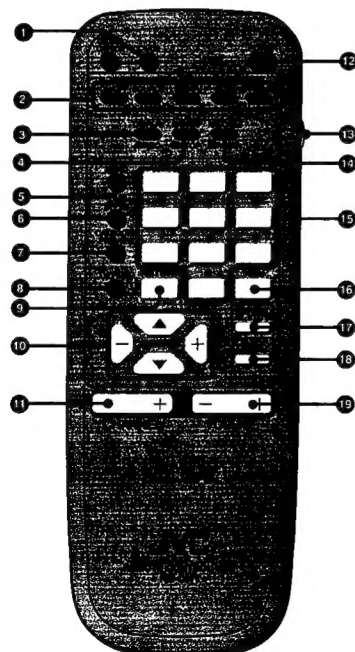
- New chassis design enables use of a main board with simplified circuitry.
- Comb filter improved picture quality.
- MASTER COMMAND Ai remote control with multi-color on-screen "Menu" display, allowing interactive, total TV operation.
- Provided with miniature tuner (TV / CATV)
- Full-square CRT (cathode ray tube) reproduces fine textured picture in every detail.
- PLL synthesizer system TV / CATV totaling 180 channels.
- AV COMPU LINK terminals allow simultaneous mode switching of the TV, connected receiver (or amplifier) and/or VCR.
- Closed-caption broadcasts can be viewed.
- The AV input terminal, sound input, external speaker output terminal, and audio output terminal allow for a variety of connections to another AV equipment.
- S-VIDEO input terminal for taking best advantage of Super VHS.
- Variable audio output terminal.
- Built-in MTS & SURROUND circuit with A / V system.

OPERATING INSTRUCTIONS

- The operating instructions are the same as for AV-31BP4(US&CA) (No.50793). Therefore, please refer to the AV-31BP4(US&CA) SERVICE MANUAL for detailed instructions.

NOTE : The on-screen display in CANADA model is shown in English only, no Spanish text is available.

Locations of Remote Control Buttons



1	CLOSED CAPTION buttons	p.28
2	PIP buttons	p.12
3	DISPLAY button	p.26
4	MAIN/SAP button	p.16
5	MENU button	p.5
6	LIVE EFFEX button	p.17
7	CATEGORY PREVIEW button	p.18
8	TV/VIDEO button	p.10
9	RETURN button	p.20
10	FUNCTION (▼▲ - +) buttons	p.14
11	CHANNEL (-/+) button	p.11
12	POWER button	p.8
13	3-way mode selector	p.32
14	ANT/CABLE button	p.10
15	Number keys	p.11
16	100+ button	p.11
17	THEATER/AV STATUS button	p.15, 16
18	MUTE button	p.17
19	VOLUME (-/+) button	p.11

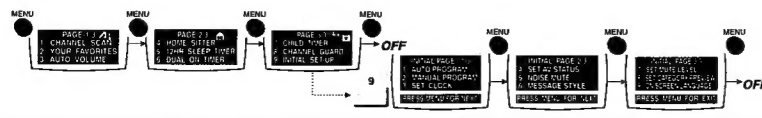
MENU Selection

Most of the TV's functions can be selected with the remote control unit.

1. Press **MENU**. The function list will appear.
2. Press the corresponding number key to select a function.
3. A function can be set on the screen.

Note :

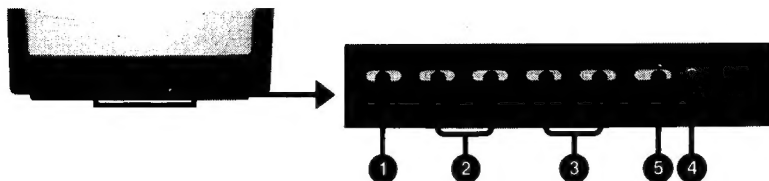
- When "9. INITIAL SET-UP" is selected, another function list will be displayed. Use the number keys to select a function.



Locations of TV Buttons and Parts

FRONT PANEL

AV-27BP4



How to use the FUNCTION button:

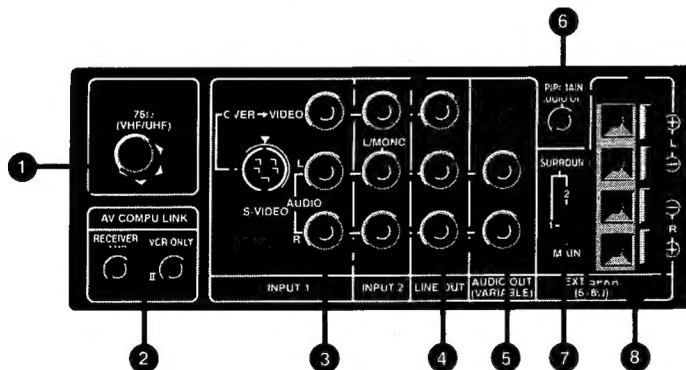
- Press this button to display a list of functions. While the list is being displayed, press the button again to select the desired function; then change the level or setting with LEVEL/CHANNEL (-/+).
- Other buttons may be used by referring to the respective page of this user guide for their description.

Note:

- Illustrations for front panels and rear panels used in this user guide are of the AV-27BP4. The buttons and jacks of the other models follow the same layout. The locations of the POWER/ON TIMER lamp, however, are different.

① FUNCTION button	P.6
② LEVEL/CHANNEL (-/+) buttons	P.11
③ VOLUME (-/+) buttons	P.11
④ POWER/ON TIMER lamp	P.8, 22, 23
⑤ POWER button	P.8

REAR PANEL



① Antenna terminal	P.7
② AV COMPU LINK jacks	P.34
③ INPUT (1, 2) jacks	P.30
④ LINE OUT jacks	P.30
⑤ AUDIO OUT (VARIABLE) jacks	P.30
⑥ PIP/MAIN AUDIO OUT jack	P.30
⑦ EXT SPKR switch	P.31
⑧ EXT SPKR jacks	P.30

Notes (also see "CONNECTION" on pages 30 to 35):

AUDIO OUT (VARIABLE) jacks:

Outputs the sound of the picture appearing on the TV.

- The output sound level can be adjusted with VOLUME (-/+) on the TV.

LINE OUT jacks:

Output the sound and picture that are appearing on the TV.

- A picture that is input to the S-VIDEO jack of INPUT jacks is not output through the LINE OUT jacks.
- If both the INPUT and LINE OUT jacks are connected to the same VCR, the screen becomes distorted except during playback of VCR.

INPUT jacks:

- Audio output from monaural equipment is connected to INPUT 2 jack. Audio output is connected to the L/MONO jack.
- Connect nothing to S-VIDEO jack, when using the VIDEO jack of INPUT 1 jack.

PIP/MAIN AUDIO OUT jack:

Is used for connecting cordless headphones.

- This terminal outputs the sound of the picture that is appearing on the TV. The sound of the PIP picture is output when the PIP picture is appearing on the screen.

Antenna terminal: See Page 7.

EXT SPKR jacks: See page 30.

SPECIFIC SERVICE INSTRUCTIONS

DISASSEMBLY PROCEDURE

REMOVING THE REAR COVER

1. Unplug the power supply cord and remove the ten screws marked **A** as shown in Fig. A.
- * When reinstalling the rear cover, carefully push it inward after inserting the main board into the rear cover groove.

REMOVING THE CHASSIS

- * After removing the rear cover.
1. As shown in Fig. B slide and pull out the CHASSIS in the direction of arrow.
(If necessary, take off the wire clamp and connectors, etc.)

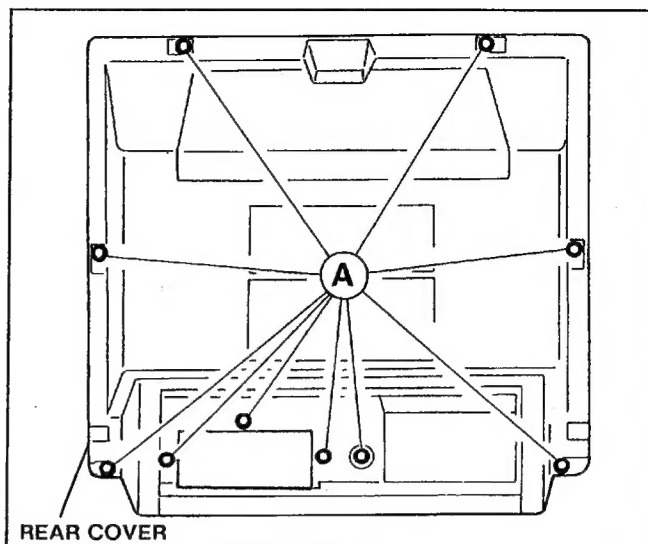


Fig. A

REMOVING THE AV TERMINAL PWB

- * After removing the rear cover.
1. Remove the two screws marked **A** as shown in Fig. C.
 2. While wideing the claw marked **B**, raise the AV TERMINAL PWB in the arrow direction marked **C** as shown in Fig. C.
 3. The connector will then be free and the AV TERMINAL PWB can be removed.

REMOVING THE PIP PWB

- * After removing the rear cover.
1. While widening the claws marked **A** as shown in Fig. D.
 2. Raise the PIP PWB in the arrow direction marked **B** as shown in Fig. D.
 3. The connector will then be free and the PIP PWB can be removed.

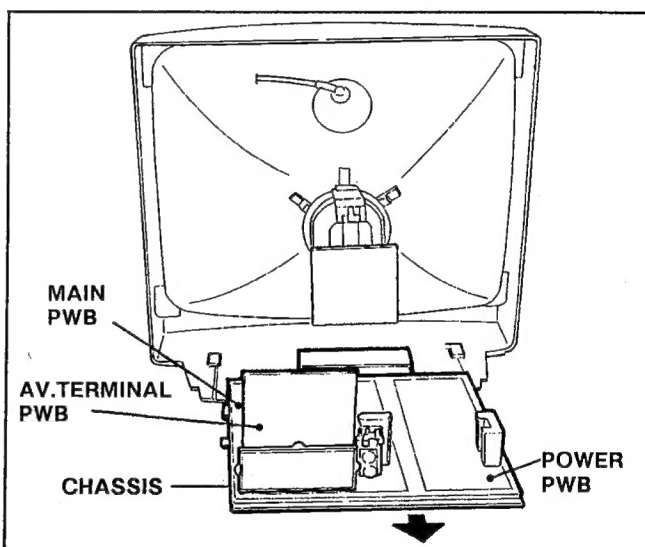


Fig. B

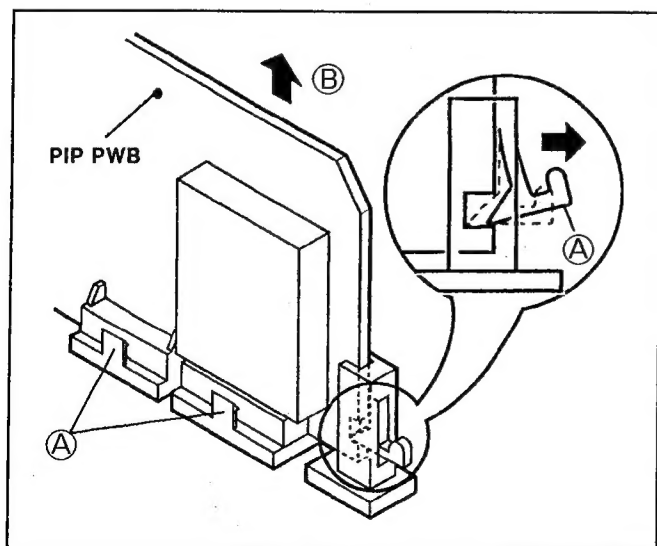


Fig. D

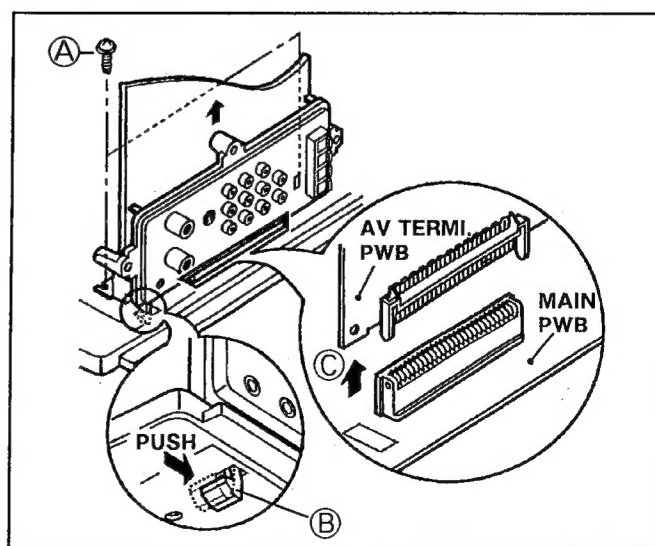


Fig. C

SETTING UP THE CHASSIS FOR CHECK/REPAIR

As shown in Fig E, set the removed chassis upright. When conducting a check with power supplied, be sure to confirm that the CRT earth wire is connected to the CRT socket PW board and the MAIN PW board.

WIRE CLAMPING AND CABLE TIES

Be sure to clamp the wire.

Never remove the cable tie used for tying the wires together.

Should it be inadvertently removed, be sure to tie the wires with a new cable tie.

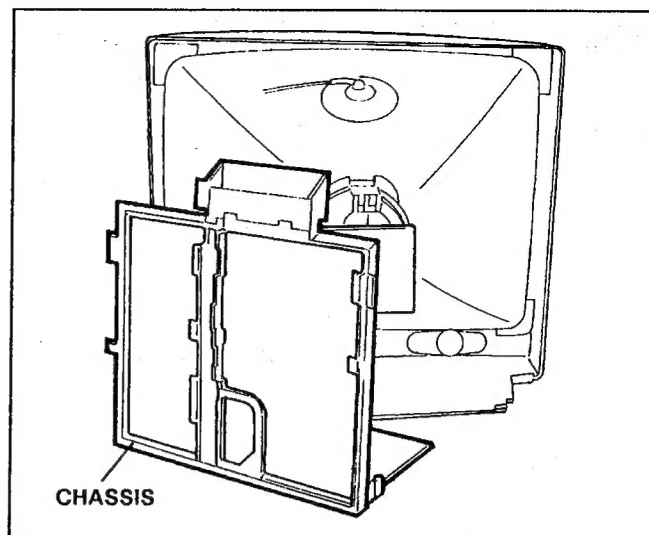


Fig. E

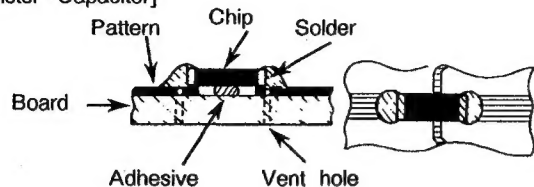
■ REPLACEMENT OF CHIP COMPONENTS

- CHIPS ARE NOT USED ON CERTAIN MODELS. REFER TO THE DESCRIPTIONS ON THIS PAGE ONLY WHEN WORKING ON MODELS ON WHICH CHIPS ARE EMPLOYED.

Replacement of the chip on printed circuit board can be performed easily as follows.

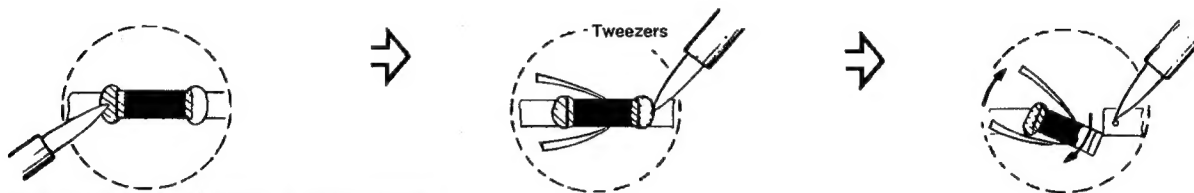
1 When mounted

[Resistor · Capacitor]



2 Removal of the chip

- (1) Remove either of the soldered contacts.
- (2) Hold the chip with tweezers and remove the other contact.
- (3) Work the chip free from the adhesive with tweezers.

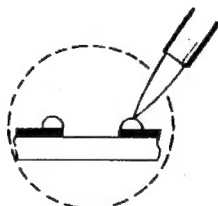


3 Preheating and soldering of chip pieces

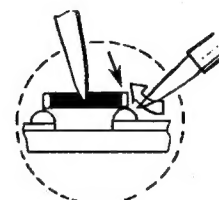
Be sure to preheat chip pieces (except the transistor) especially the capacitor before soldering with hot air, about 150°C (hair dryer or such can be used) for about 2 minutes. Then, immediately solder with an iron of about 30W.

4 Replacing the chip pieces

- (1) Apply the solder to the board first.



- (2) Hold the chip with tweezers and solder it in place, hold the iron at a 45° angle when soldering.

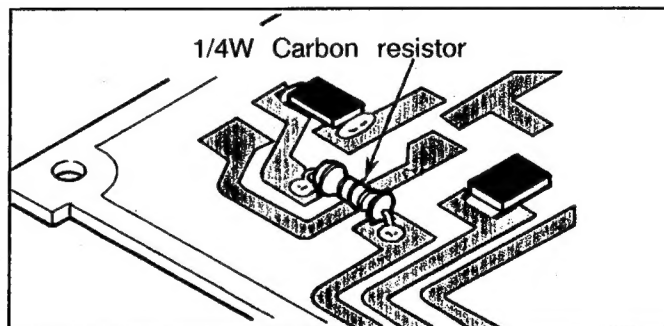


- Discrete parts can be substitutionally mounted as shown in the figure on the right.

Mounting is also possible by passing the wires from the board front side (parts side) through the chip soldering hole (vent hole of registration part).

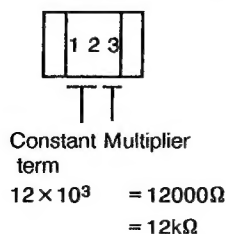
Substitute parts are as follows.

- Chip Metal Glaze Resistor
→ Carbon Resistor 1/4W ±5%
- Chip Ceramic Capacitor
→ Ceramic Capacitor 50V ±5%

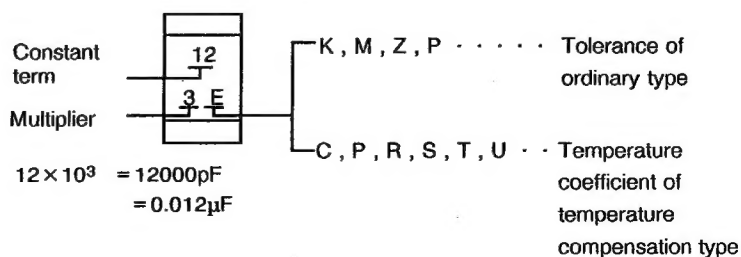


- Decoding of chip parts constant terms

< Chip Metal Glaze Resistor >



< Chip Ceramic Capacitor >



SERVICE ADJUSTMENTS

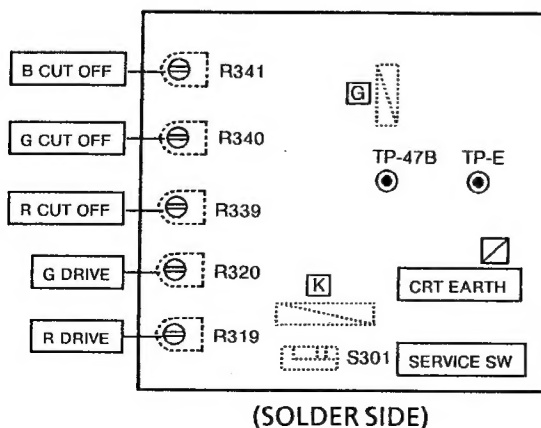
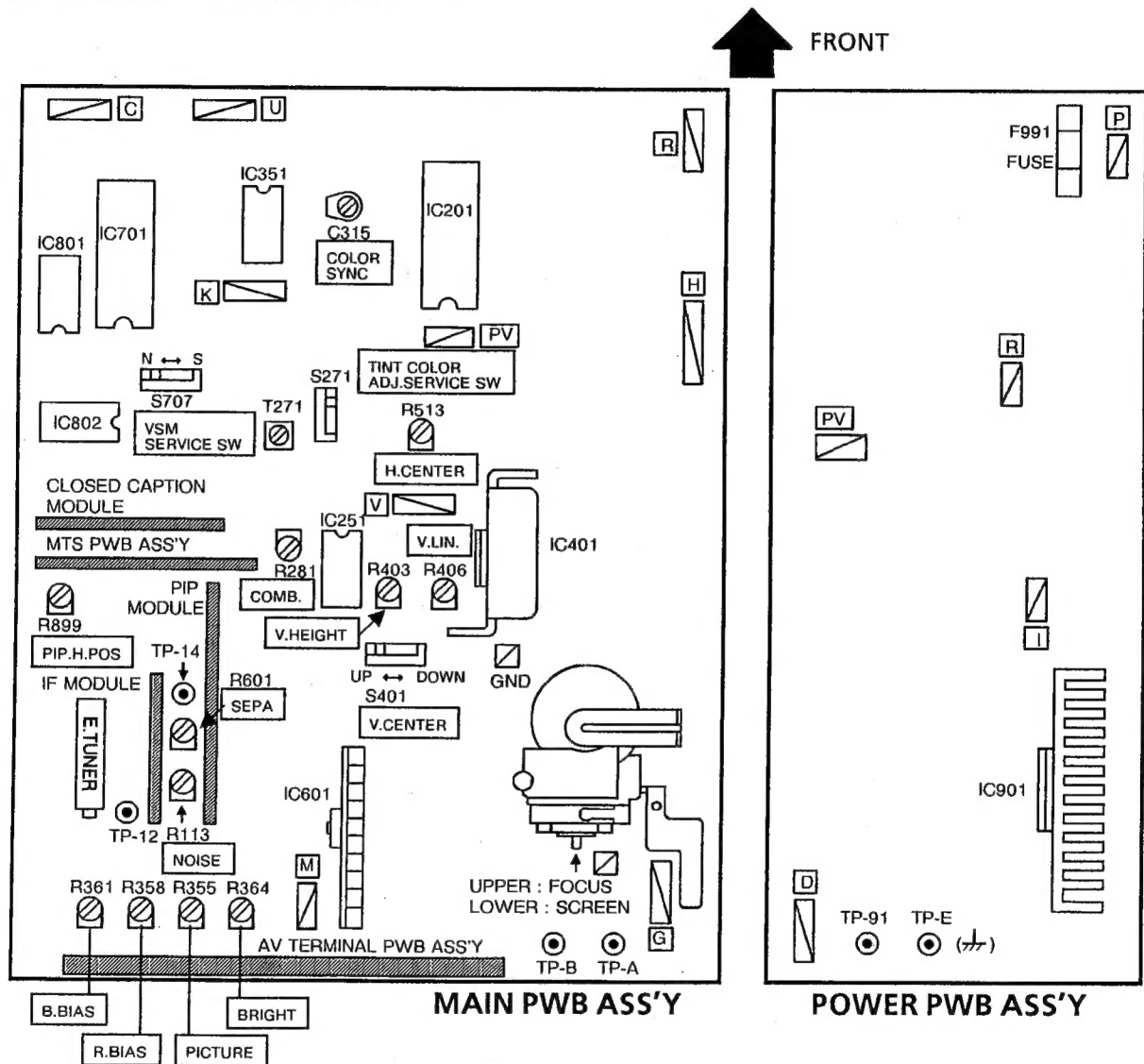
TOOLS AND FIXTURES FOR ADJUSTMENT

- DC VOLTMETER
- TV MULTI. CHANNEL SOUND GENERATOR.
- OSCILLOSCOPE
- PATTERN GENERATOR (NTSC)

PREPARATION BEFORE ADJUSTMENT

- Set the BRIGHT, PICTURE, COLOR, TINT, etc. to the standard settings.

ADJUSTMENT LOCATION



ADJUSTMENT

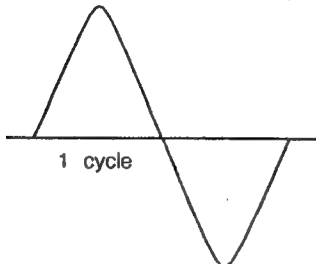
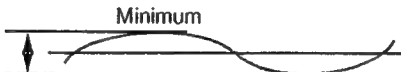
Item	Measuring instrument	Test point	Adjustment part	Description
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POWER CIRCUIT

B1 POWER SUPPLY	DC VOLTEMETER	TP-91 TP-E ($\nearrow$)		1. Confirm that the voltage between TP-91 and TP-E ($\nearrow$) is DC $135.5V \pm 1.5V$.
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MAIN CIRCUIT

NOISE (RF. AGC)			NOISE VR (R113)	1. Adjust the NOISE VR so that the noise appears in the picture. 2. Next turn the NOISE VR in a direction that the noise disappears from the picture and stop at the point where the noise has disappeared from the picture. 3. Turn to another channel and confirm that there are no abnormalities.
COLOR SYNCHRONIZATION	PATTERN GENERATOR	IC201 Pin ⑤ Pin ⑥	COLOR SYNCHRONIZATION (C315)	1. Receive the color bar signal. 2. Connect pins ⑤ and ⑥ of IC201 to pin ④ (+9V). 3. Adjust the COLOR SYNCHRONIZATION to obtain color synchronization. 4. Remove the connections and check that the color synchronization does not deteriorate on any of the channels.
COMB FILTER	PATTERN GENERATOR	IC251 PIN ⑫	DL P TRANSF. (T271) COMB FILTER VR (R281)	1. Receive the color bar signal. 2. Connect the oscilloscope to pin ⑫ of IC251. Magnify the chroma signal portions of the color bar waveform so that the 3.58 MHz elements become easy to observe. 3. Adjust DLP TRANSF. (T271), and minimize the 3.58MHz elements. 4. Regulate the COMB FILTER adjustment VR (R281) to further minimize the 3.58MHz elements. 5. Repeat steps 3 and 4 to fully minimize the 3.58MHz elements.
V. CENTER	PATTERN GENERATOR		V. CENTER SW (S401)	• The screen can be shifted vertically by changing the V. CENTER SW.
V. HEIGHT & V. LINEARITY	PATTERN GENERATOR		V. HEIGHT VR (R403) V. LINEARITY VR (R406)	1. Receive a picture that enable vertical symmetry to be checked. 2. Reduce the vertical size with the V. HEIGHT VR. 3. Adjust the vertical symmetry with the V. LINEARITY VR. 4. Readjust the V. HEIGHT VR so that the picture extends to normal size.

Item	Measuring instrument	Test point	Adjustment part	Description
H.CENTER			H. CENTER VR (R513)	1. Observe the picture and adjust the H. CENTER VR control for equal horizontal position left and right.
SEPARATION	TV MULTICHANNEL SOUND GENERATOR	AUDIO OUTPUT L, R	SEPARATION VR (R601)	1. Set the TV multichannel sound signal generator for generating stereo signal and output signal of about 3KHz from the left channel. 2. Connect an oscilloscope to the "L" output and obtain a clear view of 1- cycle portion of 3KHz waveforms. 3. Change connection of the oscilloscope to the "R" output and expand the voltage axis. 4. Adjust the SEPARATION VR and minimize the 3KHz crosstalk portion.
 L-Channel signal waveform  R-Channel crosstalk portion				
SUB BRIGHT	Remote control unit		VSM SERVICE SWITCH (S707)	1. By pressing THEATER/AV STATUS KEY of the remote control unit, reset the respective functions (TINT, COLOR, PICTURE, BRIGHT, DETAIL) 2. Turn VSM SERVICE SWITCH to the S side. 3. Press FUNCTION KEY (+/- or ▽/△) of the remote control unit. 4. Select BR(BRIGHT) adjustment mode using FUNCTION KEY (▽/△) of the remote control unit and obtain an optimum brightness using the adjusting (+/-) key of FUNCTION. 5. Select THEATER MODE using THEATER/AV STATUS KEY of the remote control unit. 6. Select BR(BRIGHT) adjustment mode using FUNCTION KEY (▽/△) of the remote control unit. 7. Adjust to slightly more bright than NORMAL MODE using FUNCTION KEY (+/-) of the remote control unit. 8. After adjustment, return VSM SERVICE SWITCH to the N side. • Avoid excessive brightness.
PICTURE	Remote control unit		VSM SERVICE SWITCH (S707)	1. By pressing THEATER/AV STATUS KEY of the remote control unit, reset the respective functions (TINT, COLOR, PICTURE, BRIGHT, DETAIL) 2. Turn VSM SERVICE SWITCH to the S side. 3. Press FUNCTION KEY (+/- or ▽/△) of the remote control unit. 4. Select PI(PICTURE) adjustment mode using FUNCTION KEY (▽/△) of the remote control unit and obtain an optimum PICTURE using the adjusting (+/-) key of FUNCTION. 5. Select THEATER MODE using THEATER/AV STATUS KEY. 6. Select PI(PICTURE) adjustment mode using FUNCTION KEY (▽/△) of the remote control unit. 7. Adjust to slightly less bright (to reduce the contrast) than PI(PICTURE) of NORMAL MODE using FUNCTION KEY (+/-) of the remote control unit. 8. After adjustment, return VSM SERVICE SWITCH to the N side.

Item	Measuring instrument	Test point	Adjustment part	Description
TINT & COLOR	Remote control unit		VSM SERVICE SWITCH (S707) TINT, COLOR ADJUST SERVICE SWITCH (S271)	1. By pressing THEATER/AV STATUS KEY of the remote control unit, reset the respective functions (TINT, COLOR, PICTURE, BRIGHT, DETAIL) 2. Turn TINT, COLOR, ADJ SERVICE SWITCH to the S side and set the NOTCH ON with remote control. 3. Turn VSM SERVICE SWITCH to the S side. 4. Press FUNCTION KEY (+/- or ▽/△) of the remote control unit. 5. Select the TI(TINT) and CO(COLOR) controls with the remote control unit function keys (▽/△). Use the (+/-) keys of FUNCTION to adjust for the most natural color. 6. Select THEATER MODE using THEATER/AV STATUS KEY. 7. Select TI(TINT) or CO(COLOR) adjustment mode using FUNCTION KEY (▽/△) of the remote control unit. 8. Adjust to the same setting of TI(TINT) or CO(COLOR) as NORMAL MODE using FUNCTION KEY (+/-) of the remote control unit. 9. After adjustment, return VSM SERVICE SWITCH and TINT, COLOR ADJ SERVICE SWITCH to the N side and return the NOTCH OFF with remote control.

FOCUS

FOCUS	PATTERN GENERATOR		FOCUS VR	1. Adjust the FOCUS VR to obtain clear pictures. 2. Check that pictures have been adjusted to optimum appearance in both center and peripheral areas of the screen.
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CRT SOCKET CIRCUIT

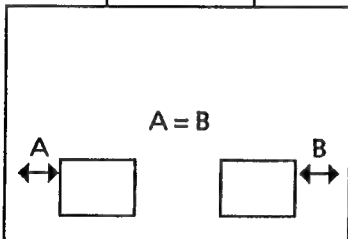
HORIZONTAL LINE			SERVICE SWITCH (S301)	1. Turning the SERVICE SWITCH from the N side to the S side will bring the horizontal line display to the screen. 
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MTS CIRCUIT

Do not touch the VRs inside the MTS PW BOARD.

Item	Measuring instrument	Test point	Adjustment part	Description
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PIP CIRCUIT

PIP BRIGHT & PIP PICTURE			PIP BRIGHT VR (R364) PIP PICTURE VR (R355) (MAIN PWB)	1. Make the picture PIP. 2. Obtain optimum pictures equivalent to the pictures displayed in the main screen by adjusting PIP BRIGHT VR and PIP PICTURE VR. * Avoid excessive brightness.
PIP WHITE BALANCE	PATTERN GENERATOR		PIP B BIAS VR (R361) PIP R BIAS VR (R358) (MAIN PWB)	1. Receive a white signal. 2. Display white over the PIP screen. 3. Adjust PIP B BIAS VR and PIP R BIAS VR until the PIP screen becomes white entirely. * Do not touch the WHITE BALANCE VRs (R234, R235) inside the PIP PW BOARD.
PIP H. POSITION			PIP H. POSITION VR (R899) (MAIN PWB)	1. Make the picture PIP. 2. Adjust the PIP H. POSITION VR until A and B as shown in the Fig. become uniform when the PIP screen is shifted in the right and left directions by means of the remote control.
PIP COLOR & TINT			PIP COLOR VR (R023) PIP TINT VR (R022) (PIP PWB)	1. Make the picture PIP. 2. Obtain optimum pictures equivalent to the pictures displayed in the main screen by adjusting PIP COLOR VR and PIP TINT VR.
PIP H. CENTER			PIP H. CENTER TRANSF. (T101) (PIP PWB)	1. Make the picture PIP. 2. Observe the picture and adjust the PIP H. CENTER TRANSF. control for equal horizontal position left and right.

HOW TO CHECK THE HIGH VOLTAGE HOLD DOWN CIRCUIT

1. HIGH VOLTAGE HOLD DOWN CIRCUIT

After repairing of the high voltage hold down circuit shown in Fig. 1.

This circuit shall be checked to operate correctly.

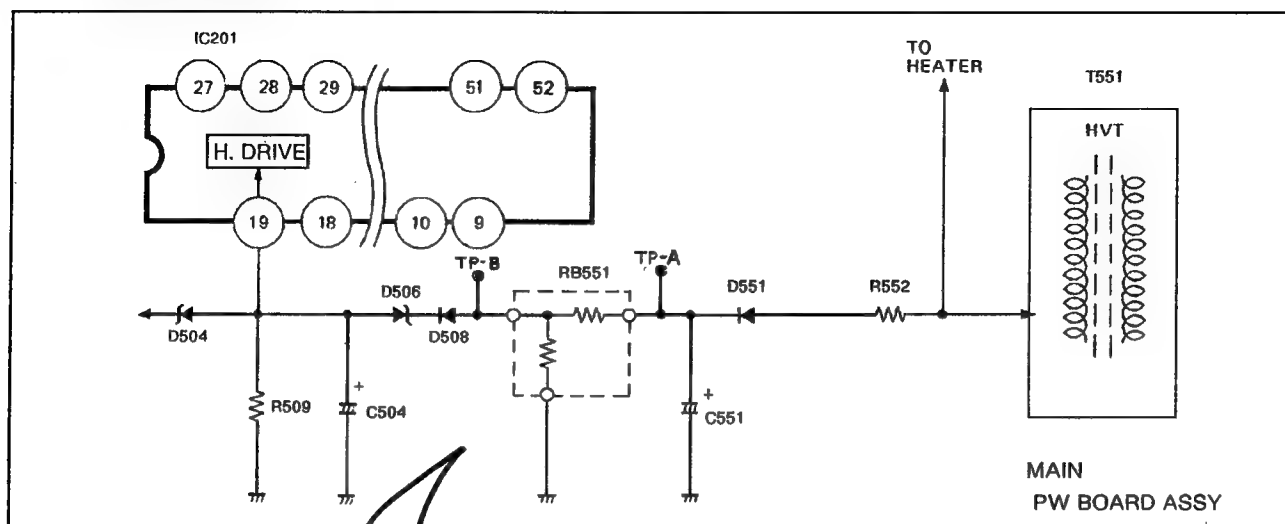


Fig. 1

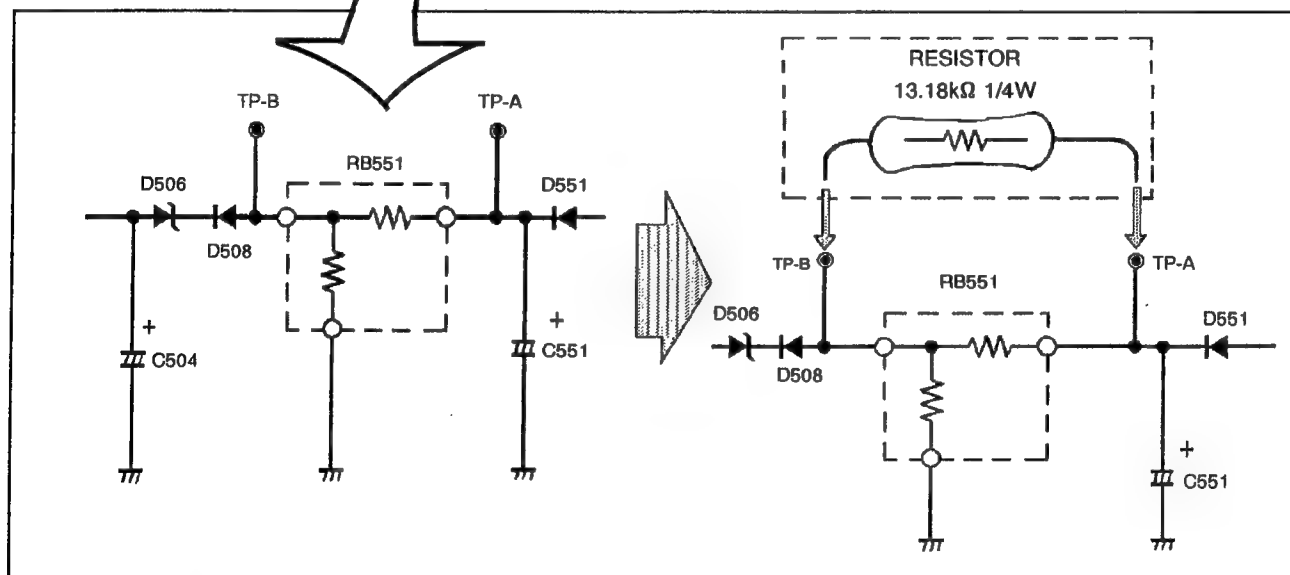


Fig. 2

2. CHECKING OF THE HIGH VOLTAGE HOLD DOWN CIRCUIT.

- (1) Make sure that the power SW is at OFF.
- (2) As shown in Fig. 2, set the resistor 13.18kΩ 1/4W (between TP-A and TP-B).
- (3) Turn the power SW ON.
- (4) Make sure that the screen picture disappears.
- (5) Turn the power SW OFF.
- (6) Remove the resistor 13.18kΩ 1/4W from RB551 (between TP-A and TP-B).

■ PURITY, CONVERGENCE AND WHITE BALANCE ADJUSTMENTS

* The locations of SERVICE SWITCH, SCREEN VR, CUT-OFF VR and DRIVE VR are described in the ALIGNMENT LOCATION of SERVICE ADJUSTMENT or the SCHEMATIC DIAGRAM.

● PICTURE TUBE

The picture tube is a precision in-line gun type. For this picture tube, dynamic convergence is carried out by a precision deflection yoke which eliminated the use of convergence yoke and convergence circuit. The adjustment of picture tube is therefore made easier as only the adjustment of static convergence by using a magnetic is enough. The deflection yoke and purity/convergence magnets assembly has been set at the factory and requires no field adjustments. However, should the assembly be accidentally jarred or tampered with, some or all adjustments may be necessary.

● COLOR PURITY & VERTICAL CENTER

Loosen yoke retaining screw (Fig. B-1) . With a sharp knife cut between the picture tube and the wedge. Remove wedges completely and clean off dried adhesive from the picture tube. PAINT is used to lock the tabs of the purity/convergence magnet assembly in place (Fig. B-1) . The paint must be removed with the end of a screwdriver before any adjustments are attempted.

(As to models equipped with a magnet locking ring, beforehand loosen it.)

1. Select no signal UHF channel. (or Display a monochrome pattern)
2. Let the purity tabs come in line horizontally as is shown in Fig. B-2. A long tab should be in the same direction as the other short tab.
3. Move the yoke slowly backward.
4. Turn the GREEN CUT-OFF VR to maximum and the RED and BLUE CUT-OFF VRs to minimum. Then adjust the SCREEN VR so that the green band can be seen best. (Fig. B-3)
5. Rotate the two tabs in the opposite directions and with them kept at an angle, together in either direction so that the green band is centered on the picture tube.
6. Check the vertical center position by displaying a horizontal line. (Select the CUT-OFF SERVICE SWITCH from N to S and a HORIZONTAL LINE will appear.) Unless correct, bring it to the nearest center by rotating the two tabs, kept at an angle, together in either direction. (Fig. B-4)
7. Repeat steps 5 and 6 alternately until the green band and the vertical center come to the center.
8. Move the yoke slowly towards the bell of the tube so that the whole surface of the picture tube is filled with a green pure raster.
9. Turning RED or BLUE CUT-OFF VR to maximum and GREEN CUT-OFF VR to minimum, make sure of a red or blue pure raster.
10. Secure yoke retaining screw (do not install wedges at this time) .

(As to models equipped with a magnet locking ring, secure it and keep six magnets from moving even if it is touched slightly.)

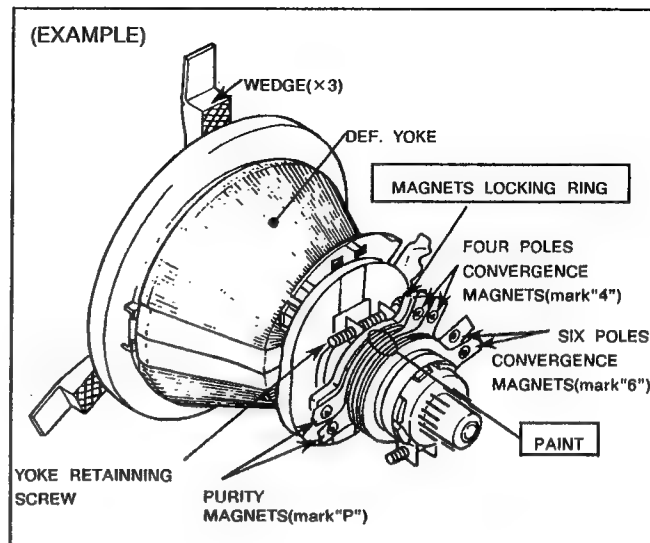


Fig. B-1

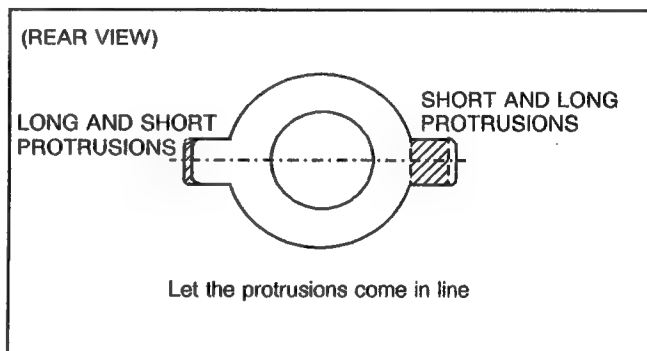


Fig. B-2

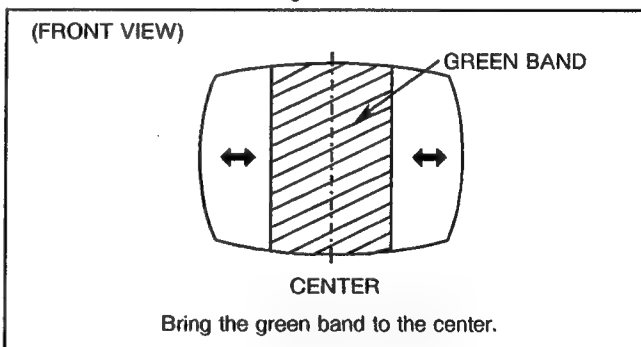


Fig. B-3

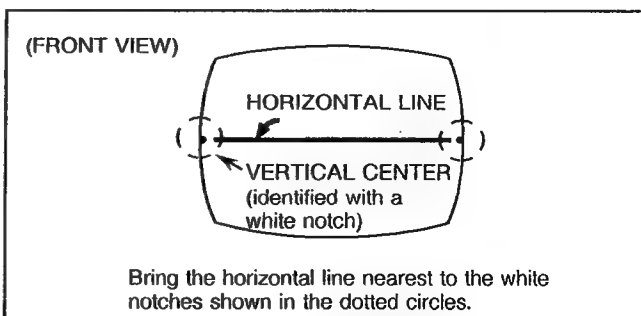


Fig. B-4

•STATIC CONVERGENCE & DYNAMIC CONVERGENCE

1. Connect a crosshatch generator to the input terminals and adjust BRIGHTNESS and CONTRAST control for a distinct pattern.
2. Adjust the convergence around the edges of the picture tube by tilting the yoke, up-down and left-right, and temporarily install one wedge at the top of the yoke. (Fig. B-7, 8, 9)
3. Rotate the front pair of tabs (four pole convergence magnet) as a unit to minimize the separation of the red and blue lines around the center of the screen. To adjust the convergence of red and blue, vary the angle between the tabs (Fig. B-5)
4. Rotate the rear pair of tabs (six pole convergence magnets) as a unit to minimize the separation of the magenta (R/B) and green lines. (Fig. B-6)
5. Adjust the spacing of the rear tabs to converge the magenta and green lines.
6. Apply paint to fix six magnets.
(As to models equipped with a magnet locking ring, tighten it.)
7. Remove the wedge installed temporarily on the yoke.
8. Tilting the angle of the yoke up, down and sideways, and adjust the yoke so as to obtain the circumference convergence. (Fig. B-8, 9)
9. Insert wedges to the position as shown in Fig. B-10 to obtain the best circumference convergence.
10. Wedge has a backing of double sided adhesive tape. Therefore, tear off one side of adhesive tape, and fix the wedges.
11. White balance adjustment (Black & White tracking) can now be performed.

•WHITE BALANCE ADJUSTMENT

(Black and White Tracking)

1. Display a monochrome pattern.
2. Set the RED and GREEN DRIVE VRs for their mechanical center.
3. Turn the RED, GREEN and BLUE CUT-OFF VRs and the SCREEN VR fully counterclockwise.
4. Display a horizontal line. (Select the CUT-OFF SERVICE SWITCH from N to S and a HORIZONTAL LINE will appear.)
5. Turn SCREEN VR slowly clockwise until a very faint horizontal line appears.
6. Turn the CUT-OFF VR of the color which has appeared first, clockwise by about 10° and then adjust the SCREEN VR again so that the color may shine faintly.
7. Turn the other color CUT-OFF VRs slowly clockwise until a reasonable white line appears.
8. Return the monochrome pattern. (When returning a monochrome pattern select the CUT-OFF SERVICE SWITCH from S to N and a monochrome pattern will appear.)
9. Adjust the RED and GREEN DRIVE VRs for best white highlights.

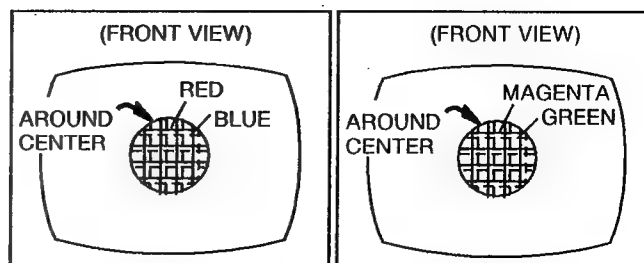


Fig. B-5

Fig. B-6

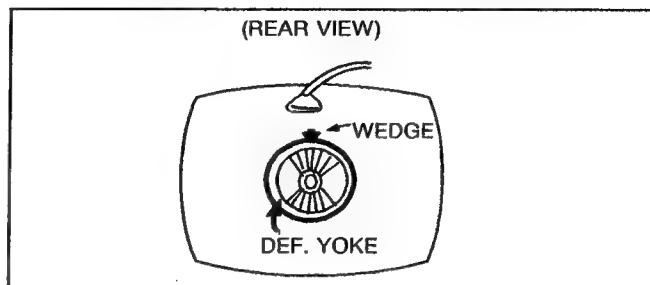


Fig. B-7

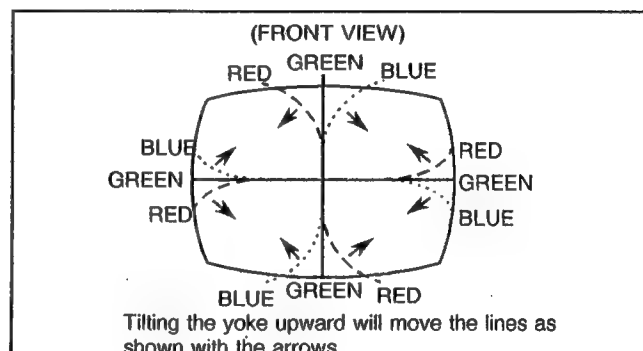


Fig. B-8

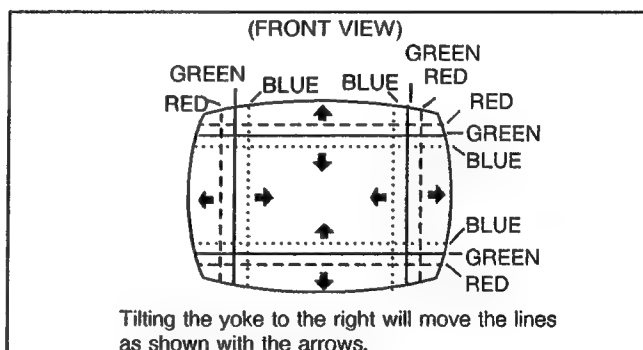


Fig. B-9

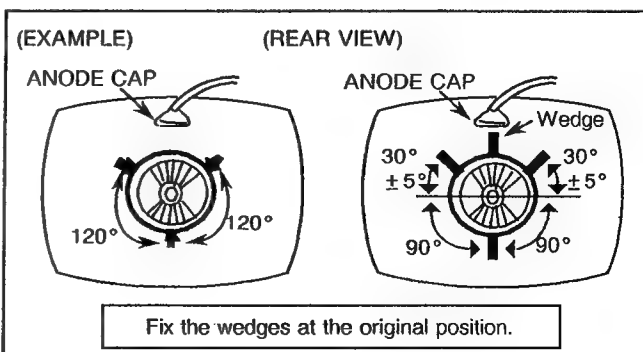
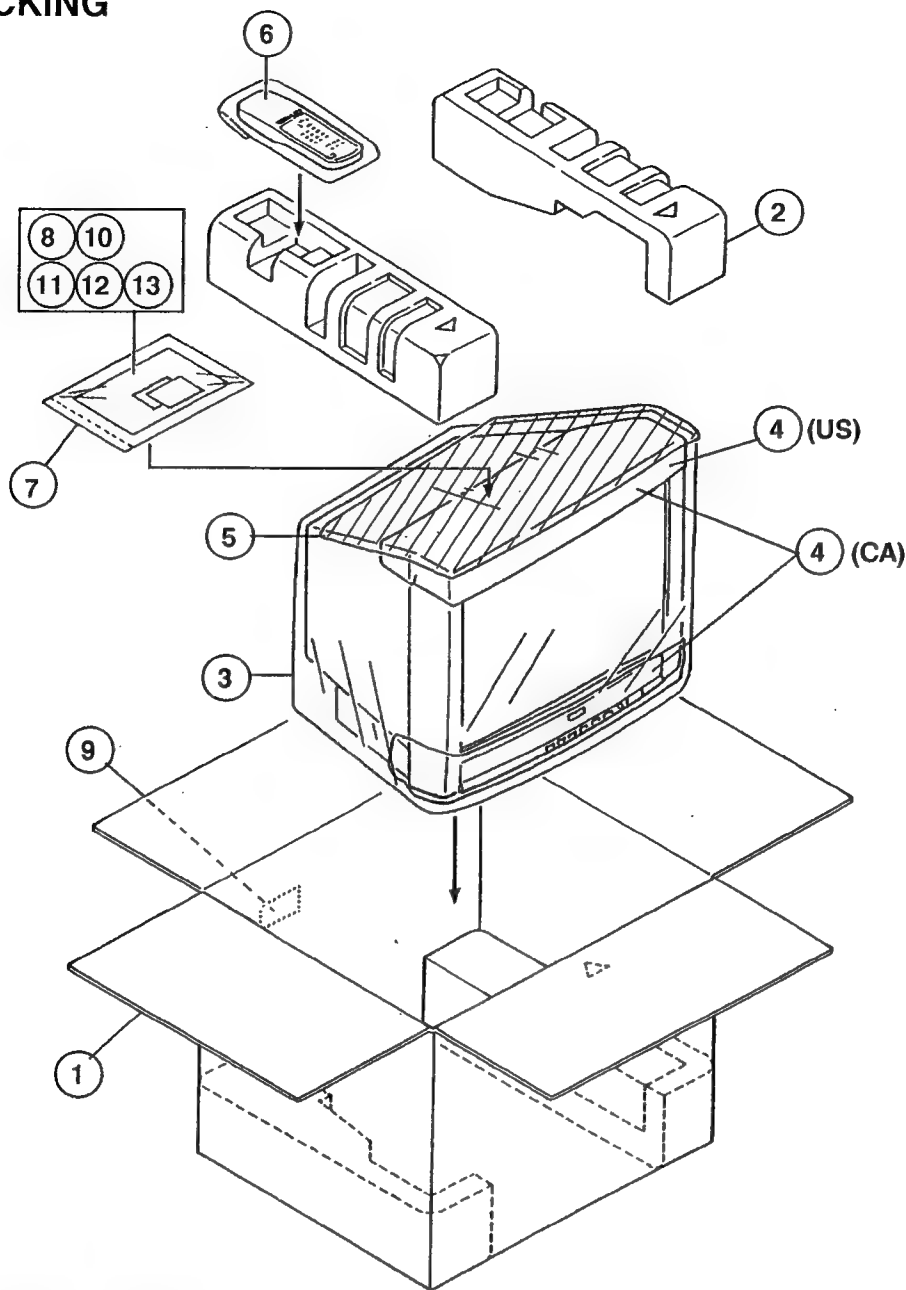


Fig. B-10

PACKING



PACKING PARTS LIST

△ Ref.No.	Part No.	Part Name	Description	Local
1	CP10972-056-A	PACKING CASE		*
2	CP11242-00B-A	CUSHION ASSY	4pcs in 1set	*
3	CP30056-002-A	POLY BAG		*
4	CP30055-001-A	TOP COVER	(US)	*
4	CP30055-001-A	TOP COVER	(×2)(CA)	*
5	CP30341-001-A	PROTECT SHEET	(CA ONLY)	*
6	RM-C671-01-KH	REMOCON UNIT		*
7	CM30751-010	POLY BAG		
8	273135P4UIBA-A	INST.BOOK	(US)	*
8	273135P4CIBA-A	INST BOOK	(CA)	*
9	CM31900-00A-A	REC KEEPING CARD	(US ONLY)	*
10	BT-51006-1	REGISTRATION CARD	(US ONLY)	*
11	BT-20025K-A	WARRANTY CARD	(CA ONLY)	*
12	BT-20071A-A	SVC CENTER LIST	(CA ONLY)	*
13	CEAC012-150J1	3.5 PLUG CABLE		*

AV-27BP4_(US&CA) STANDARD CIRCUIT DIAGRAM

■ NOTE ON USING CIRCUIT DIAGRAMS

1. SAFETY

The components identified by the  symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

2. SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

- (1) Input signal : Color bar signal
 - (2) Setting positions of each knob/button and variable resistor : Original setting position when shipped
 - (3) Internal resistance of tester : DC 20k Ω /V
 - (4) Oscilloscope sweeping time : H $\Rightarrow$ 20 μ S/div
: V $\Rightarrow$ 5mS/div
: Others $\Rightarrow$ Sweeping time is specified
 - (5) Voltage values : All DC voltage values
- * Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3. INDICATION OF PARTS SYMBOL [EXAMPLE]

- In the PW board : R1209 $\rightarrow$ R209

4. INDICATIONS ON THE CIRCUIT DIAGRAM

(1) Resistors

• Resistance value

- No unit : [Ω]
- K : [K Ω]
- M : [M Ω]

• Rated allowable power

- No indication : 1/6[W]
- Others : As specified

• Type

- No indication : Carbon resistor
- OMR : Oxide metal film resistor
- MFR : Metal film resistor
- MPR : Metal plate resistor
- UNFR : Uninflamable resistor
- FR : Fusible resistor

* Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2) Capacitors

• Capacitance value

- 1 or higher : [pF]
- less than 1 : [μ F]

• Withstand voltage

- No indication : DC50[V]
- Others : DC withstand voltage[V]
- AC indicated : AC withstand voltage[V]

* Electrolytic Capacitors

47/50 [Example]: Capacitance value [μ F]/withstand voltage[V]

• Type

- No indication : Ceramic capacitor
- MY : Mylar capacitor
- MM : Metalized mylar capacitor
- PP : Polypropylene capacitor
- MPP : Metalized polypropylene capacitor
- MF : Metalized film capacitor
- TF : Thin film capacitor
- BP : Bipolar electrolytic capacitor
- TAN : Tantalum capacitor

(3) Coils

- No unit : [μ H]
- Others : As specified

(4) Power Supply

-  : B1(135.5V)
-  : B2(12V)
-  : 9V
-  : 5V

* Respective voltage values are indicated.

(5) Test Point

-  : Test point
-  : Only test point display

(6) Connecting method

-  : Connector
-  : Wrapping or soldering
-  : Receptacle

(7) Ground symbol

-  : LIVE side ground
-  : NEUTRAL side ground
-  : EARTH ground
-  : DIGITAL ground

5. NOTE FOR REPAIRING SERVICE

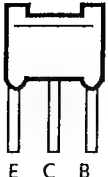
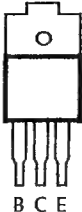
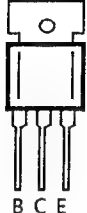
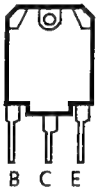
This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE (primary : ) side GND and the NEUTRAL (secondary : ) side GND. Therefore, care must be taken for the following points.

- (1) Do not touch the LIVE side GND or the LIVE side GND and the NEUTRAL side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.
- (2) Do not short between the LIVE side GND and NEUTRAL side GND or never measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and NEUTRAL side GND at the same time. If the above precaution is not respected, a fuse or any parts will be broken.

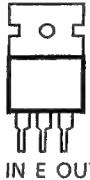
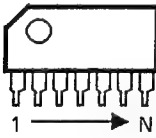
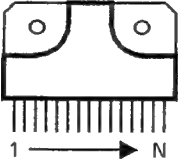
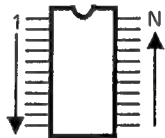
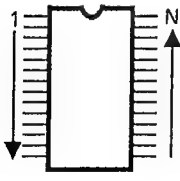
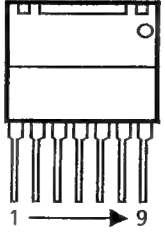
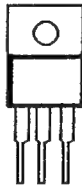
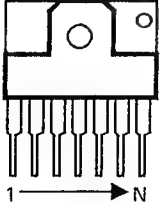
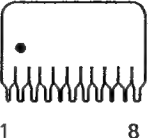
◇ Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

SEMICONDUCTOR SHAPES (* = Bottom view)

TRANSISTORS

 2SC4502-T E C B	 * E B C 2SC3811(R)	 2SD1408(OY) 2SA1306(Y) 2SC3298(Y) 2SD2348-LB B C E
 2SC2068-LB 2SD1133(CD) 2SC4256 B C E	 * E C B 2SC1815(YG) 2SA1015(YG) 2SA966(OY) 2SC2655(Y) 2SC1360	2SC1959(Y) 2SC2878(B) 2SA673(C) 2SB774(RS) 2SC2482(C1)
 2SC4589-C1 B C E	 2SA933(QR) 2SA933S(QR) 2SA1309A(QR) DTC124ES DTC323TS E C B	2SC2785(JH) 2SC1740S(QR) 2SC1740(QR) 2SC3311A(QR)

ICs

 MN1280-K MN1280-Q Vss Vcc OUT	 * OUT E IN RC78L05A-Y TA78L005AP TA78L012AP AN78L05 AN78L12	 TA78005AP TA78012AP AN7805 UPC2412HF UPC2405HF IN E OUT
 LA7952 1 → N	 TA8216H MC13516T2 1 → N	 AN5352N TC4066BP UPD6326C VUC2003 MN12C261D 1 → N
 VC2024Z MN1873221JGJ4 TA8759AN TA8720AN M65109BSP M51365SP TA8662N 1 → N	 STR-S6301 1 → 9	 SE120N 1 2 3
 LA7838 1 → N	 JCC1002 1 8	TDA1029 LM324N SM5807EP M51496P SAA5243P/E PCF84C81P/064 M37201M6-540SP TDA3810 TDA1526 M52005P CXL5005P FCB61C65-70P SAA5231 CXA1124BS M50253P 1 → N

CHANNEL CHART

AV-27BP4

AV-27BP4

[us]

MODE		BAND	CHANNEL		TUNE BAND
TV	CATV		REAL	DISP.	
○	○	VL	02		I
			03		
		VH	04		II
			05		
			06		
			07		
			08		
			09		
			10		
			11		
			12		
			13		
		MID	A	14	I
			B	15	
			C	16	
			D	17	
			E	18	
			F	19	
			G	20	
			H	21	
			I	22	
		SUPER	J	23	II
			K	24	
			L	25	
			M	26	
			N	27	
			O	28	
			P	29	
			Q	30	
			R	31	
			S	32	
			T	33	
			U	34	
		V	35		
		W	36		
		W+1	37		
		W+2	38		
		W+3	39		
		W+4	40		
		W+5	41		
		W+6	42		
		W+7	43		
		W+8	44		
		W+9	45		
		W+10	46		
		W+11	47		
		W+12	48		
		W+13	49		
		W+14	50		
		W+15	51		
		W+16	52		
		W+17	53		
		W+18	54		
		W+19	55		
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		W+21	57		
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		W+25	61		
		W+26	62		
		W+27	63		
		W+28	64		
		W+29	65		
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		W+31	67		
		W+32	68		
		W+33	69		
		W+34	70		

[CA]

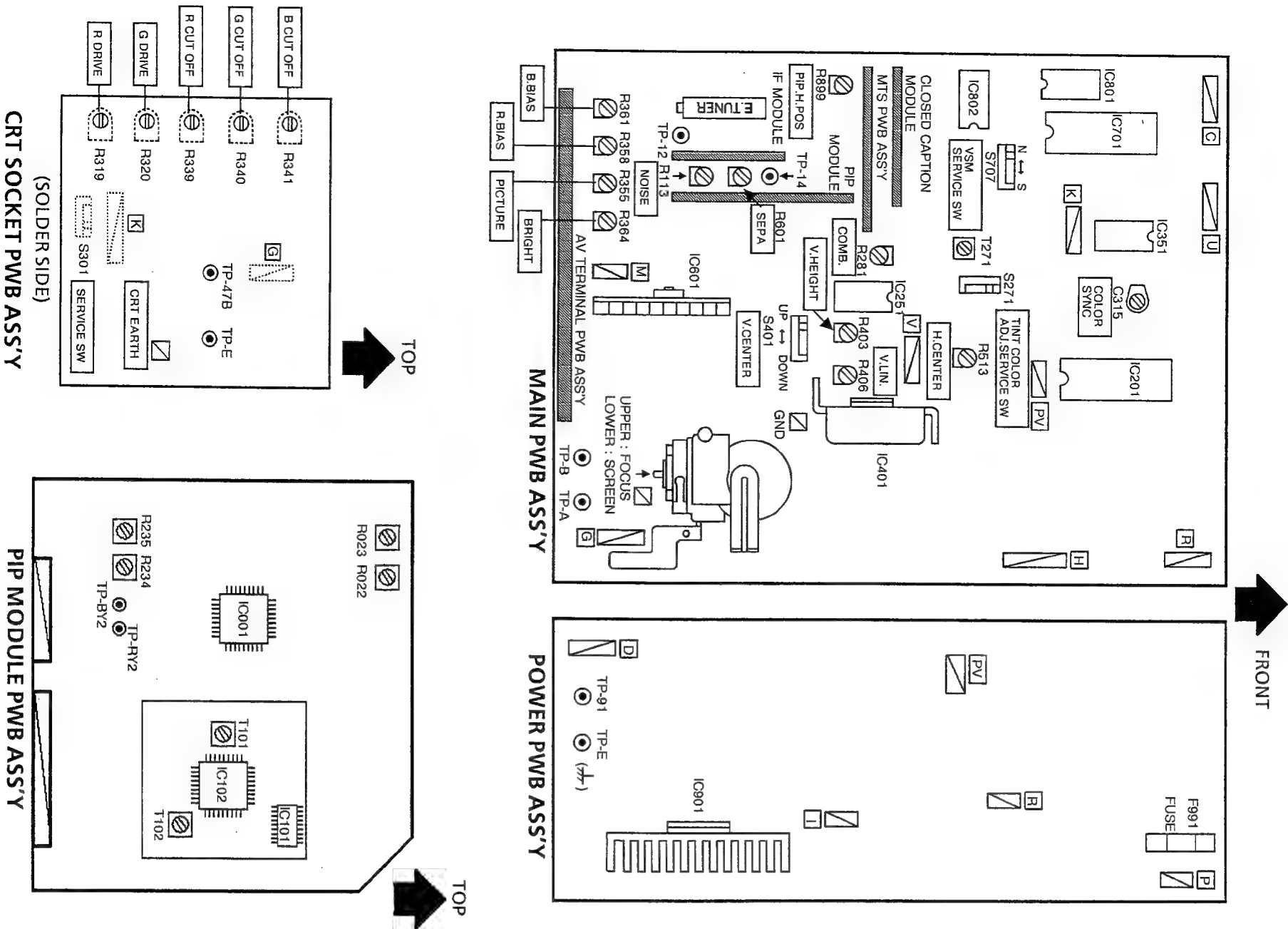
MODE		BAND	CHANNEL		TUNER BAND
TV	CATV		REAL	DISP.	
X	O	ULTRA	W+35	71	IV
			W+36	72	
			W+37	73	
			W+38	74	
			W+39	75	
			W+40	76	
			W+41	77	
			W+42	78	
			W+43	79	
			W+44	80	
			W+45	81	
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			W+67	108	
			W+68	109	
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W+73	114				
W+74	115				
W+75	116				
W+76	117				
W+77	118				
W+78	119				
W+79	120				
W+80	121				
W+81	122				
W+82	123				
W+83	124				
W+84	125				
O	X	SUB MID	A-8 A-4 A-3 A-2 A-1	01 96 97 98 99	I
			14 Σ 69		IV
TOTAL 180CH { VHF 124CH UHF 56CH					
NOTE: TO RECEIVE THE SUBSCRIPTION OR PREMIUM PROGRAMMING FROM CERTAIN CABLE COMPANIES, SPECIAL ADAPTERS MAY BE REQUIRED.					

(No.50803) 2-3

2-4 (No.50803)

MODE		BAND	CHANNEL		TUNED BAND
TV	CATV		REAL	DISP.	
○	○	VH	VL	02 03 04 05 06	I
				07 08 09 10 11 12 13	
		MID	A B C D E F G H I J K L M N O P Q R S T U V W	14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36	II
			SUPER		
X		HYPER	W+1 W+2 W+3 W+4 W+5 W+6 W+7 W+8 W+9 W+10 W+11 W+12 W+13 W+14 W+15 W+16 W+17 W+18 W+19 W+20 W+21 W+22 W+23 W+24 W+25 W+26 W+27 W+28	37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64	III
			ULTRA		
			W+29 W+30 W+31 W+32 W+33 W+34	65 66 67 68 69 70	IV

[illegible]



P.W.B. or PART NAME	CONNECTOR NAME	WIRE	CONNECTOR NAME	P.W.B. or PART NAME
MAIN PWB ASS'Y	D	↔	D	POWER PWB ASS'Y
MAIN PWB ASS'Y	PV	↔	PV	POWER PWB ASS'Y
MAIN PWB ASS'Y	M	↔	M	POWER PWB ASS'Y
MAIN PWB ASS'Y	R	↔	R	POWER PWB ASS'Y
MAIN PWB ASS'Y	G	↔	G	CRT SOCKET PWB ASS'Y
MAIN PWB ASS'Y	K	↔	K	CRT SOCKET PWB ASS'Y
MAIN PWB ASS'Y	C	↔	C	FRONT CONTROL PWB ASS'Y
MAIN PWB ASS'Y	U	↔	U	FRONT CONTROL PWB ASS'Y
MAIN PWB ASS'Y	V/H	↔		DEF. YOKE
POWER PWB ASS'Y	C995, C997	↔	GND	MAIN PWB ASS'Y
POWER PWB ASS'Y	I	↔		DEG. COIL
POWER PWB ASS'Y	P	↔		POWER CORD
AV TERMINAL PWB ASS'Y	S	↔		SPEAKER (L/R)
CRT SOCKET PWB ASS'Y	CRT EARTH	↔	EARTH WIRE	CRT

●NOTE:Refer to Main Parts and Alignment Locations (Page 2-5) for detailed connector positions.

AV-27BP4 **AV-27BP4**



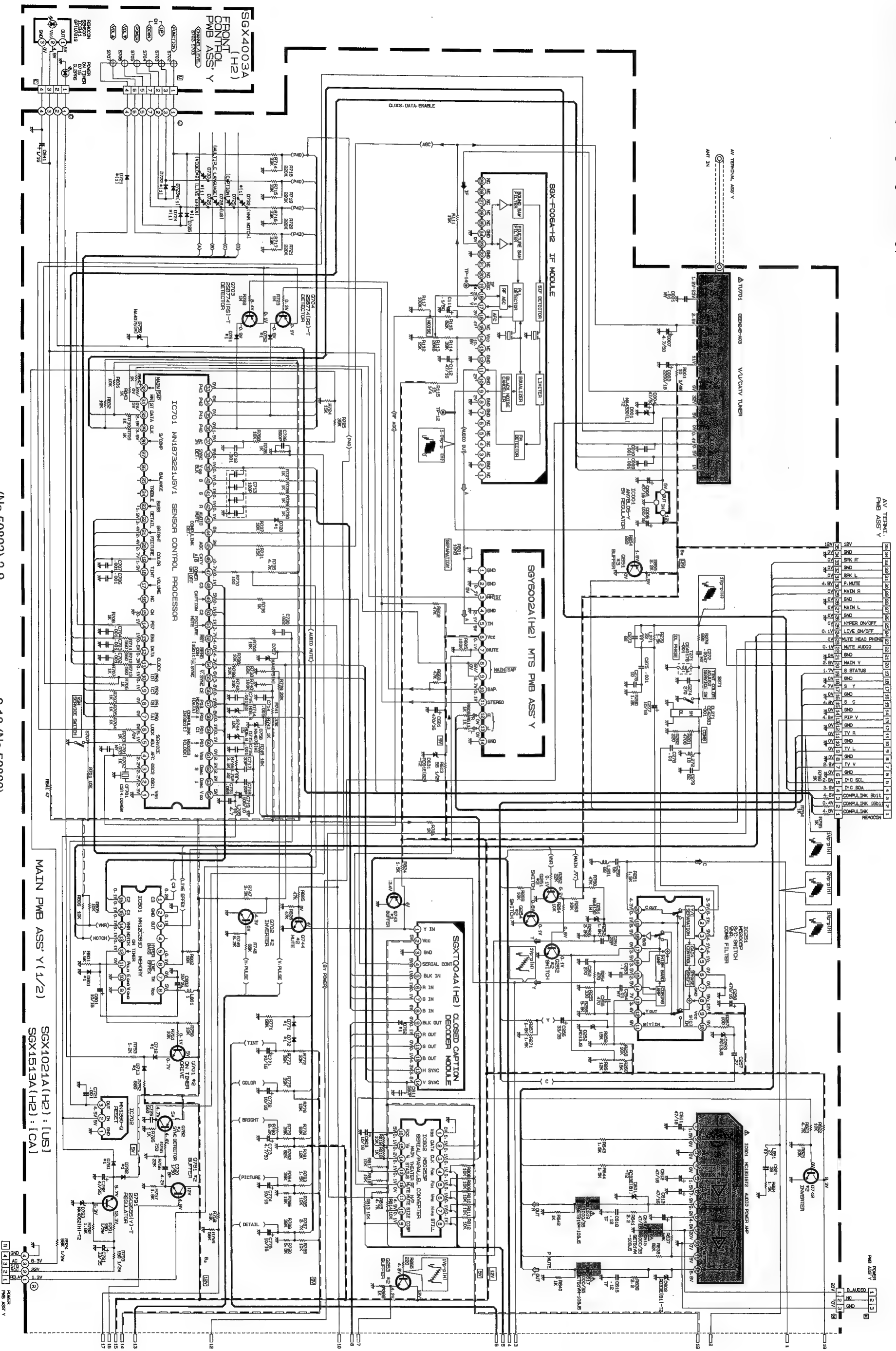
CIRCUIT DIAGRAMS AND PWB PATTERNS

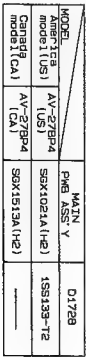
MAIN PWB, CRT SOCKET PWB, FRONT CONTROL PWB CIRCUIT DIAGRAMS

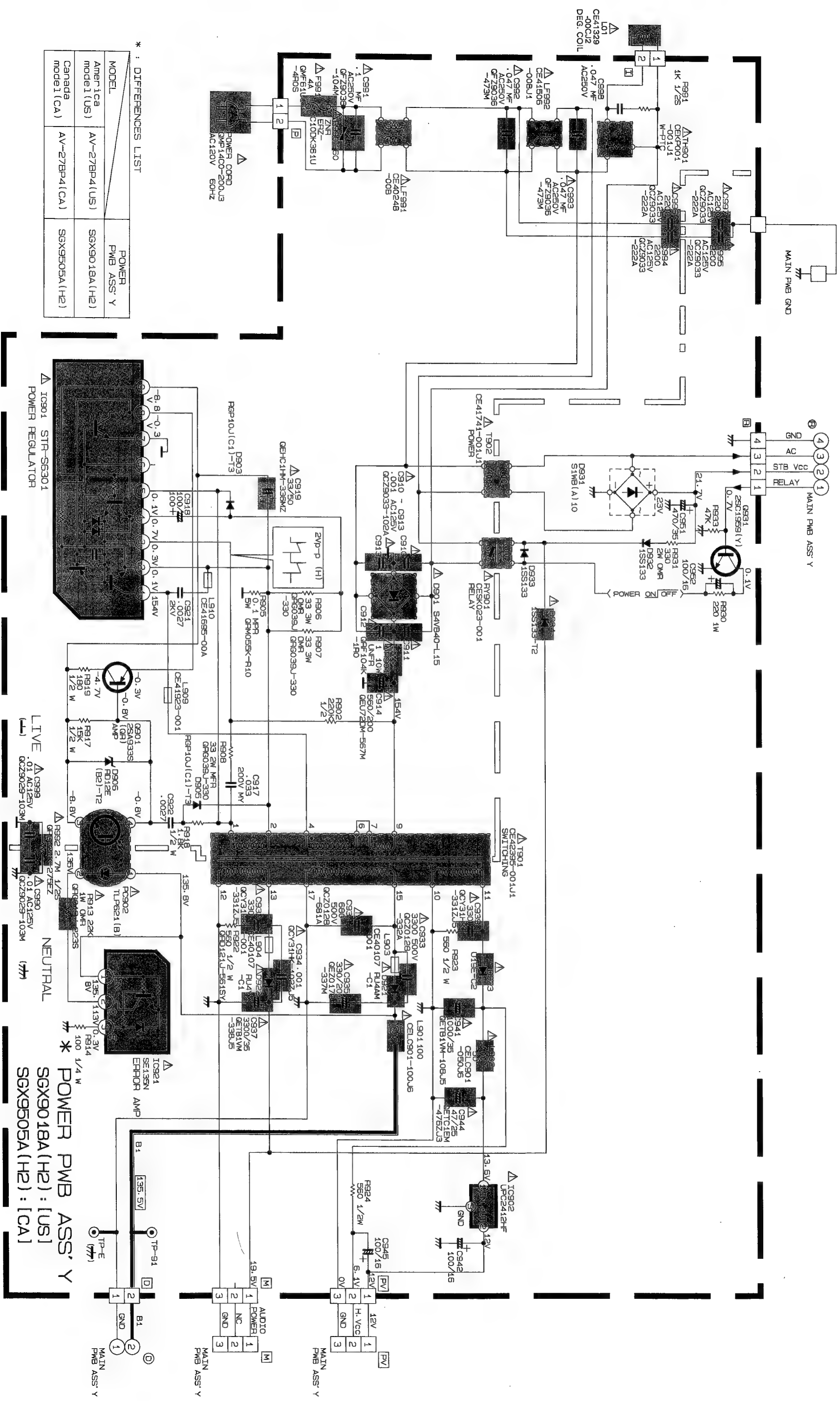
This schematic diagram applies to both (US) and (CA) models.
Refer to the Difference List in the diagram regarding the differing points between the models.

AV-27BP4 AV-27BP4

Refer to the following PWB pattern.: MAIN PWB PATTERN 2-21page. FRONT CONTROL PWB PATTERN 2-26page.





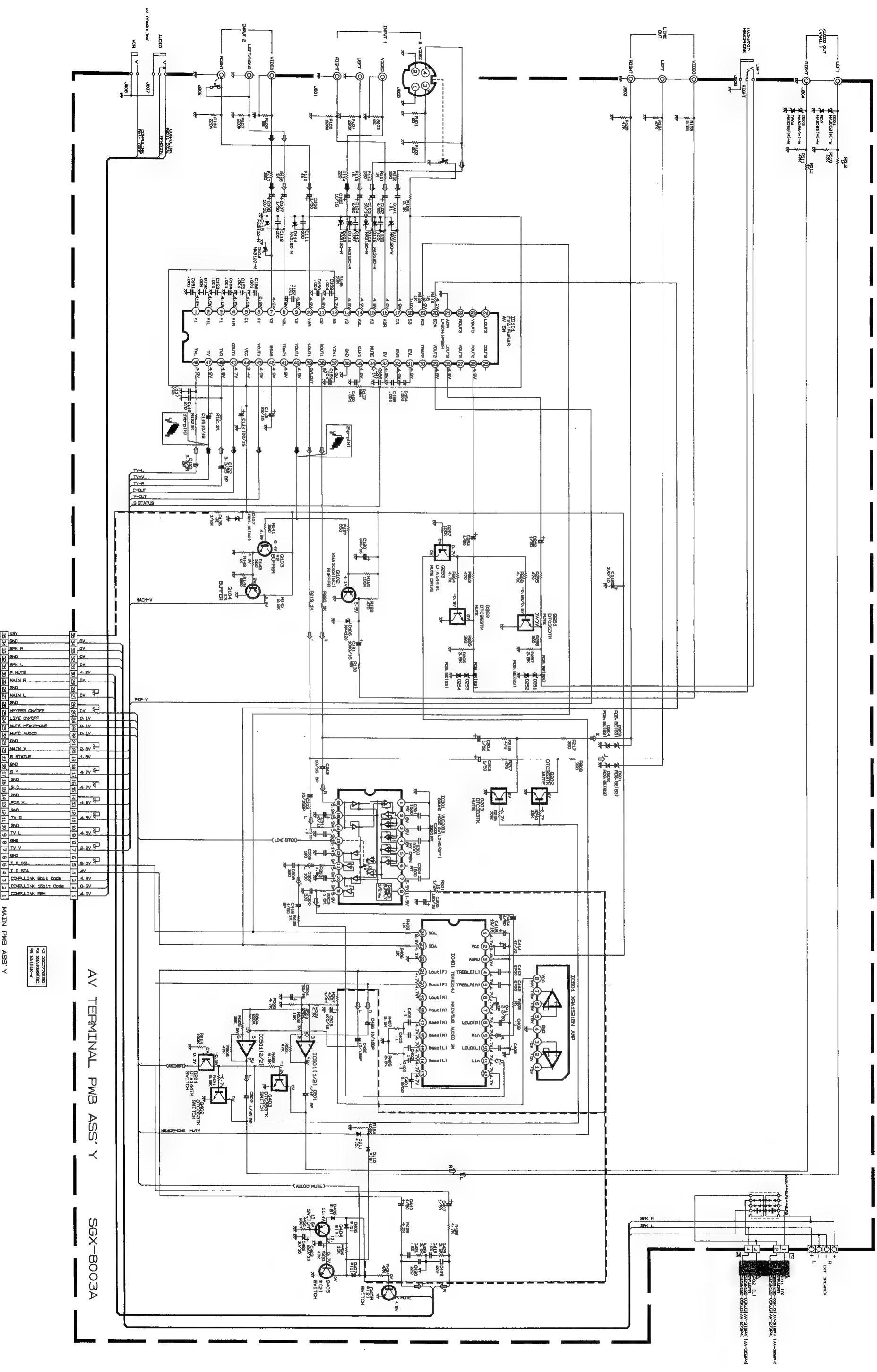


MODEL	POWER PWB ASS'Y
America model1(US)	SGX9018A(H2)
Canada model1(CA)	SGX9505A(H2)

** : DIFFERENCES LIST

* POWER PWB ASS'Y

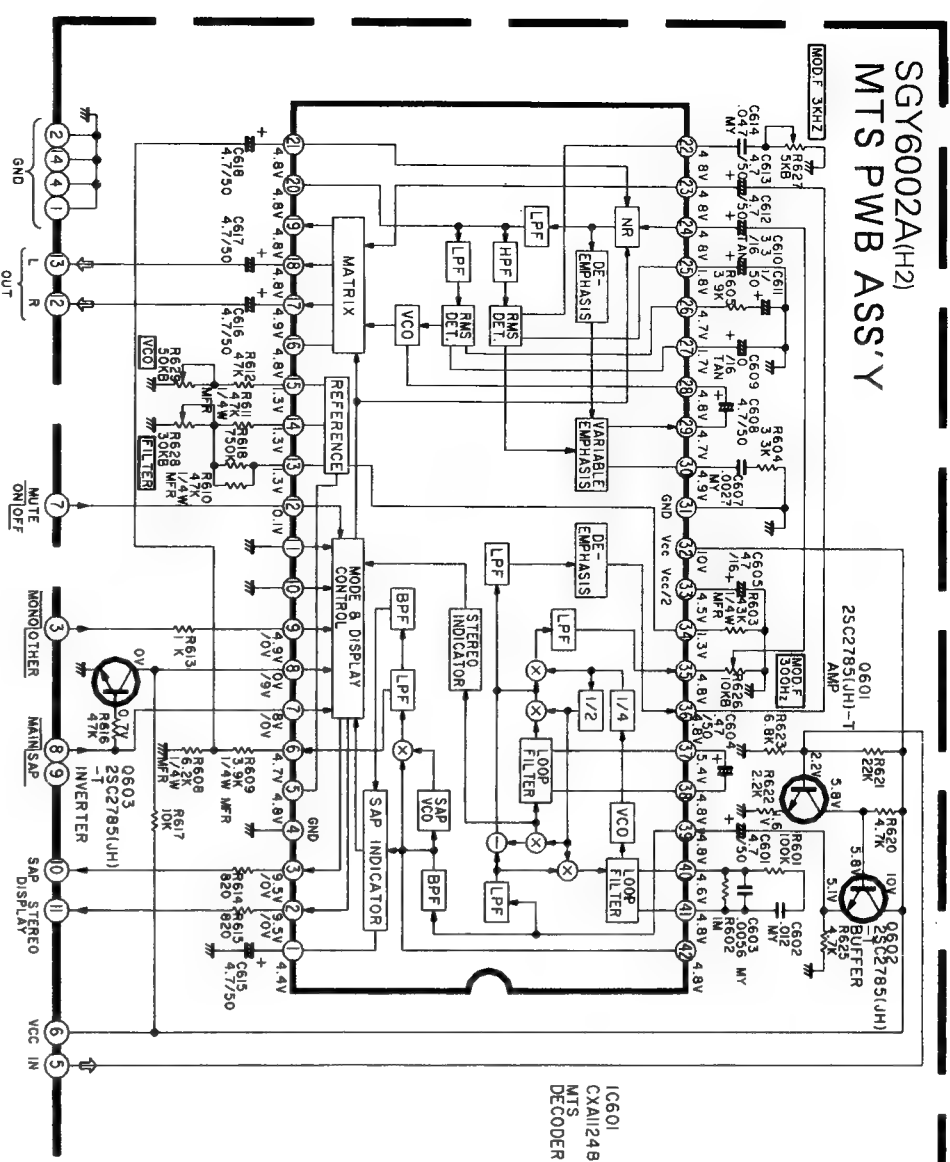
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SGX9018A(H2) : [US]
SGX9505A(H2) : [CA]
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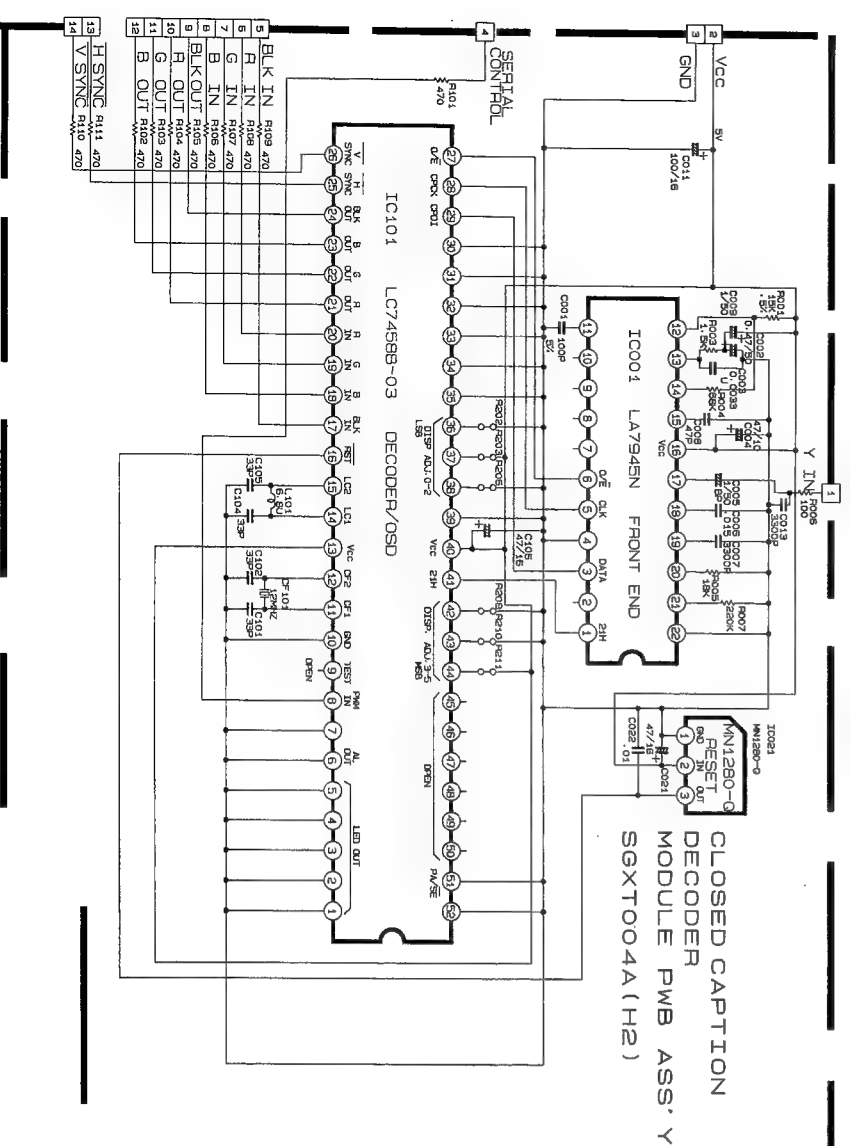


MTS PWB CIRCUIT DIAGRAM

Refer to the following PWB pattern.: MTS PWB PATTERN 2-24page.

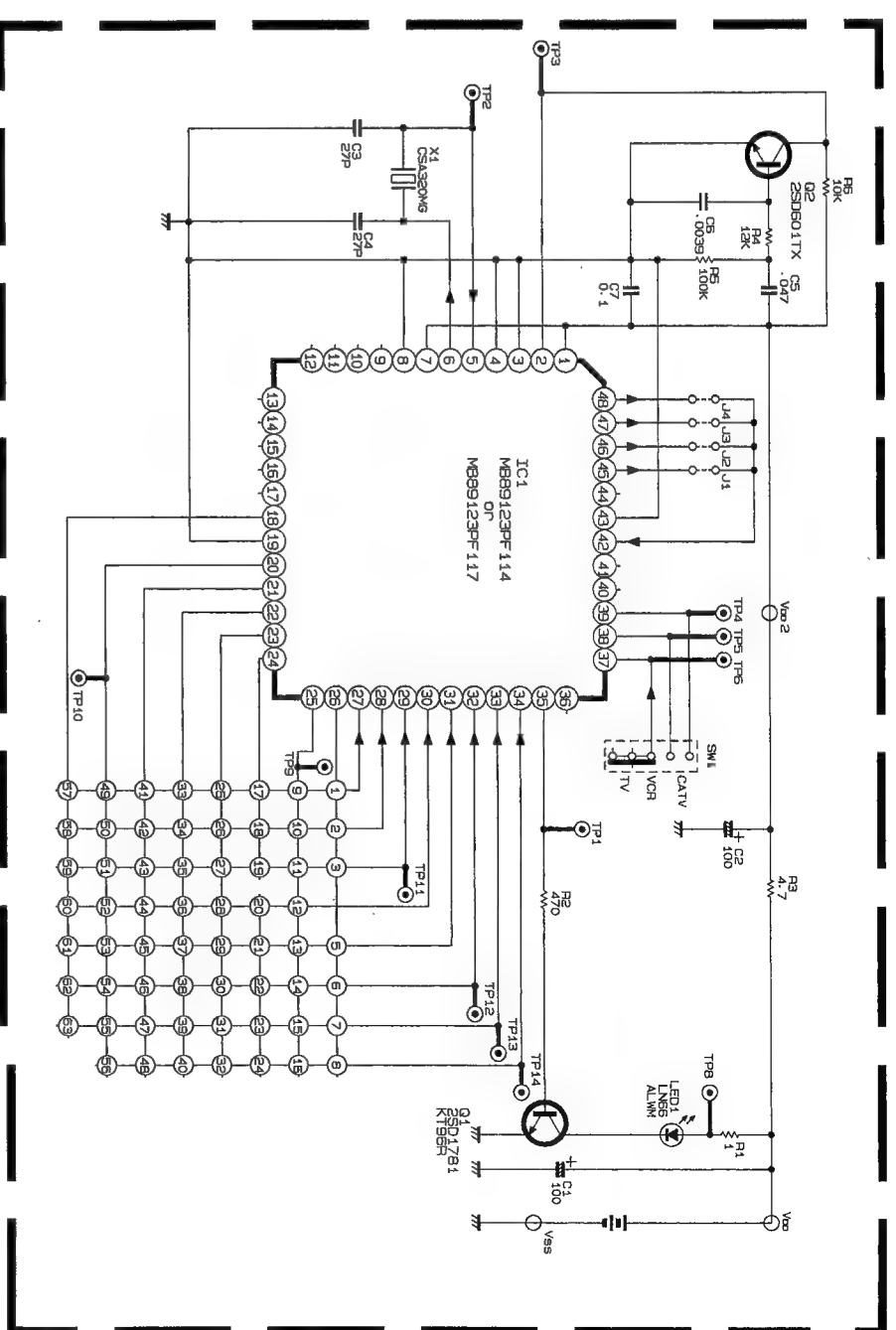


CLOSED CAPTION DECODER MODULE PWB CIRCUIT DIAGRAM



REMOTE CONTROL TRANSMITTER CIRCUIT DIAGRAM

● CIRCUIT DIAGRAM

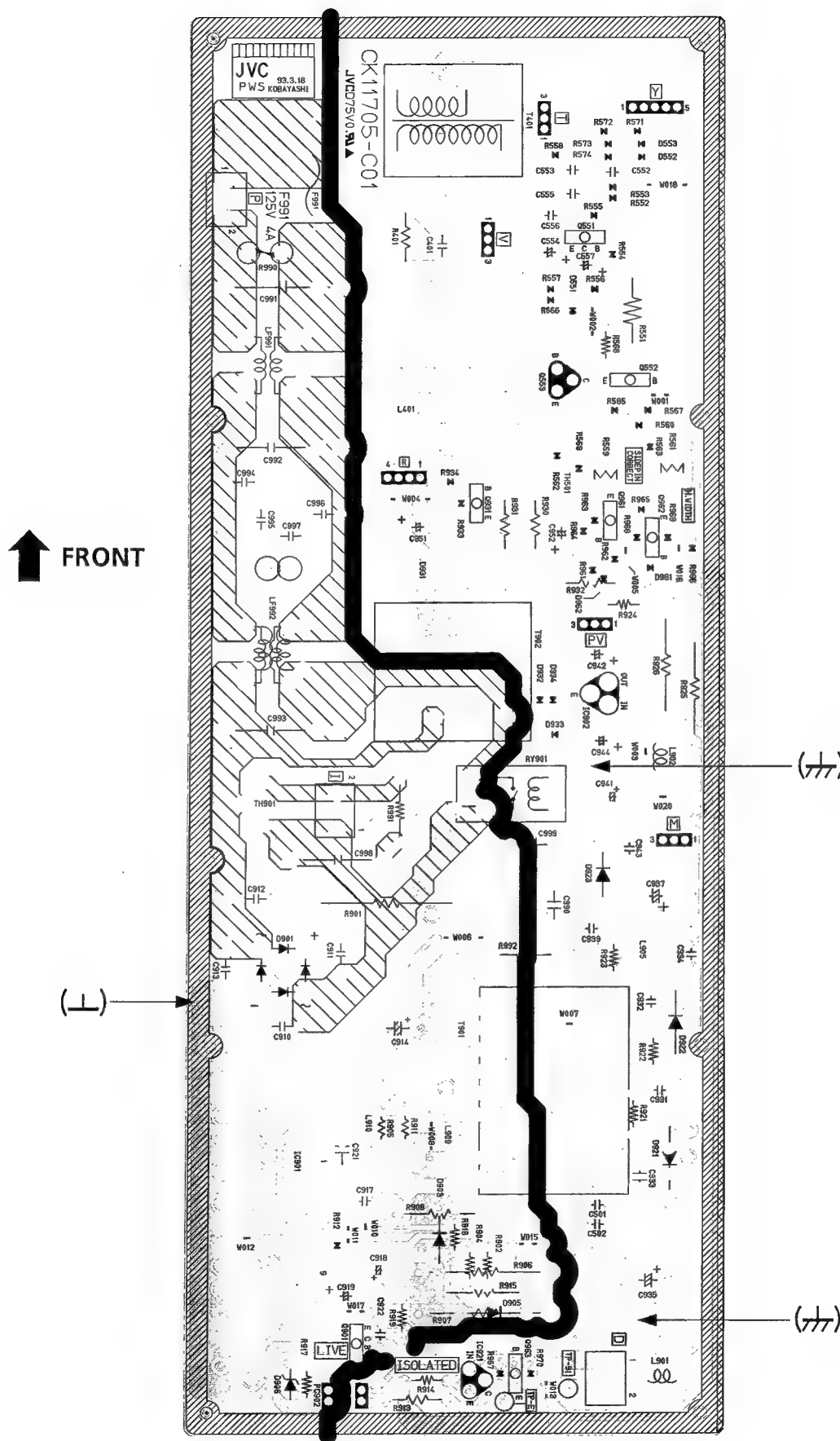


● KEY FUNCTION

No	Key name	No	Key name	No	Key name
1	MENU	15	VOLUME -	53	100+
2	CLOSED CAPTION	16	VOLUME.+	54	POWER
3	C1/C2	42	0	55	CHANNEL -
5	PIP ON/OFF	43	1	56	CHANNEL +
6	FREEZE	44	2	57	DISPLAY
7	LIVE EFFEX	45	3	58	SWAP
8	TV/VIDEO	46	4	59	ANT/CABLE
9	THEATER/AVSTA	47	5	60	SOURCE
10	FUNCTION -	48	6	61	SIZE
11	FUNCTION Δ	49	7	62	MAIN/SAP
12	FUNCTION ▽	50	8	63	CATEGORY PREVIEW
13	FUNCTION +	51	9		
14	MUTE	52	RETURN		

2-22 (No.50803)

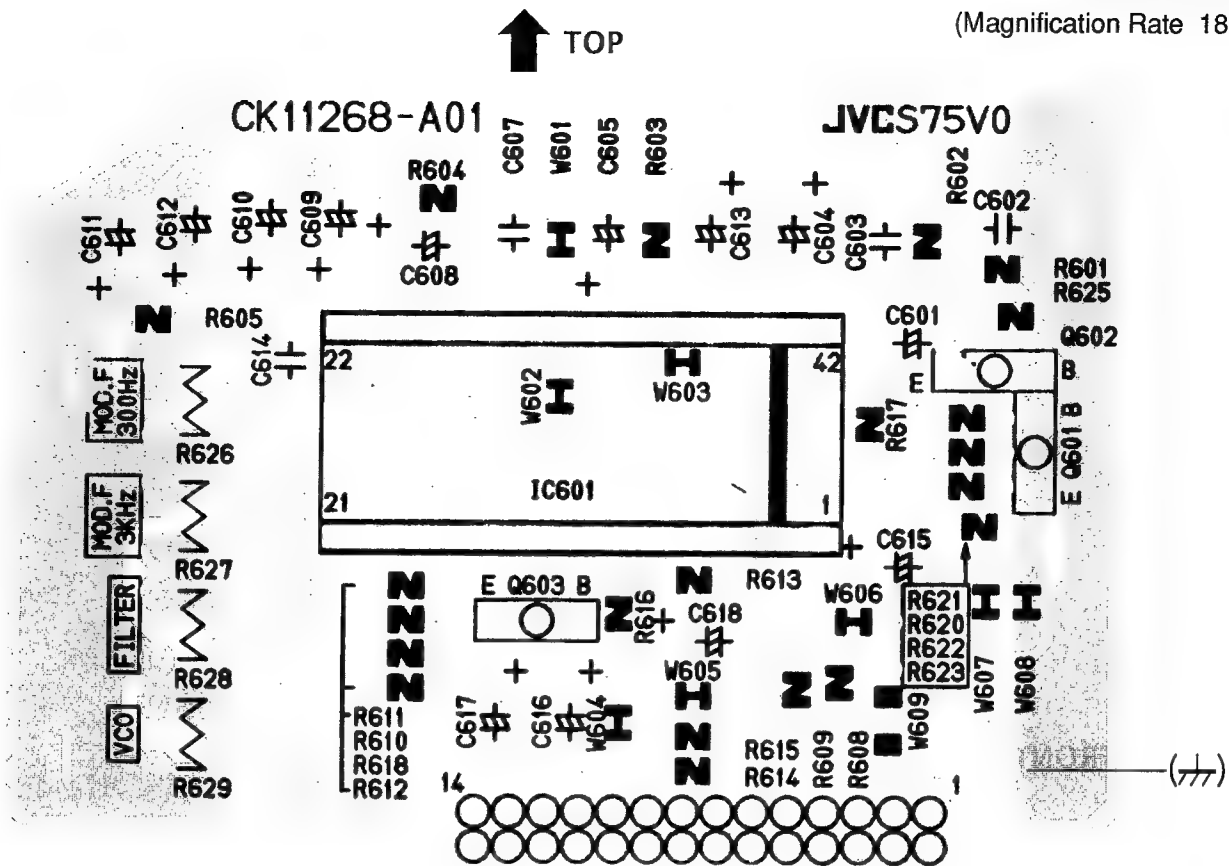
(Magnification Rate 70%)



MTS PWB PATTERN

[SGY6002A(H2)]

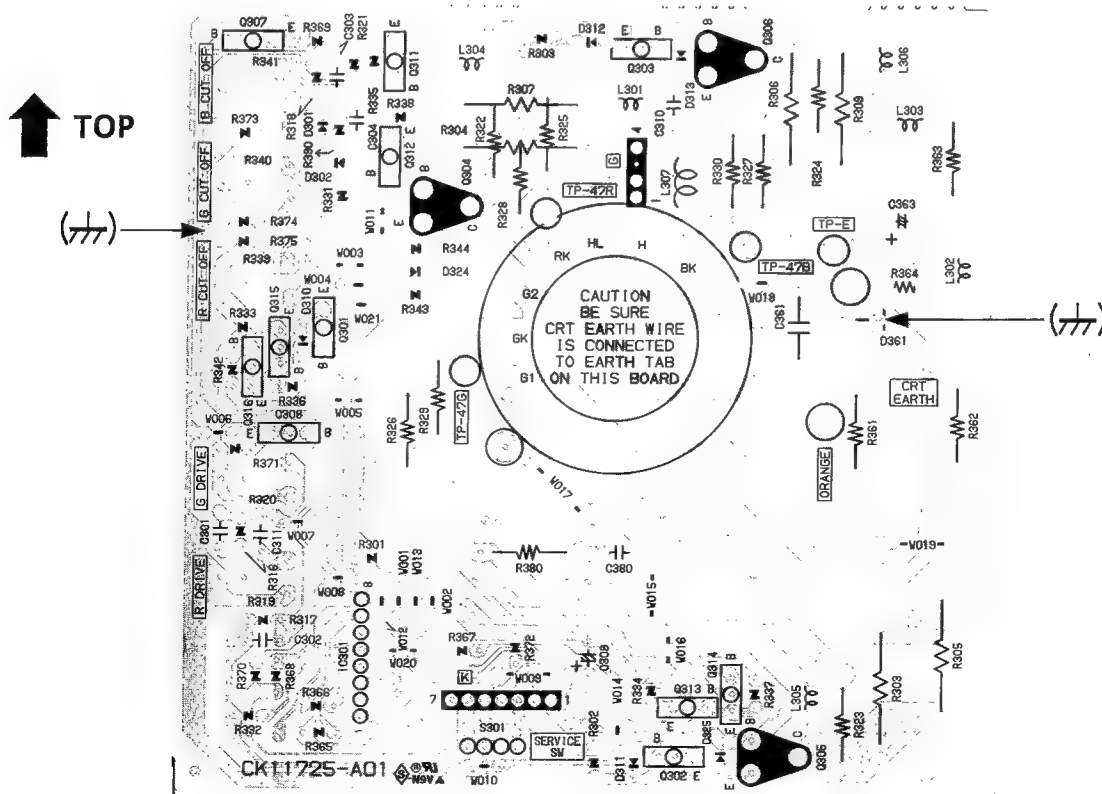
(Magnification Rate 180%)



CRT SOCKET PWB PATTERN

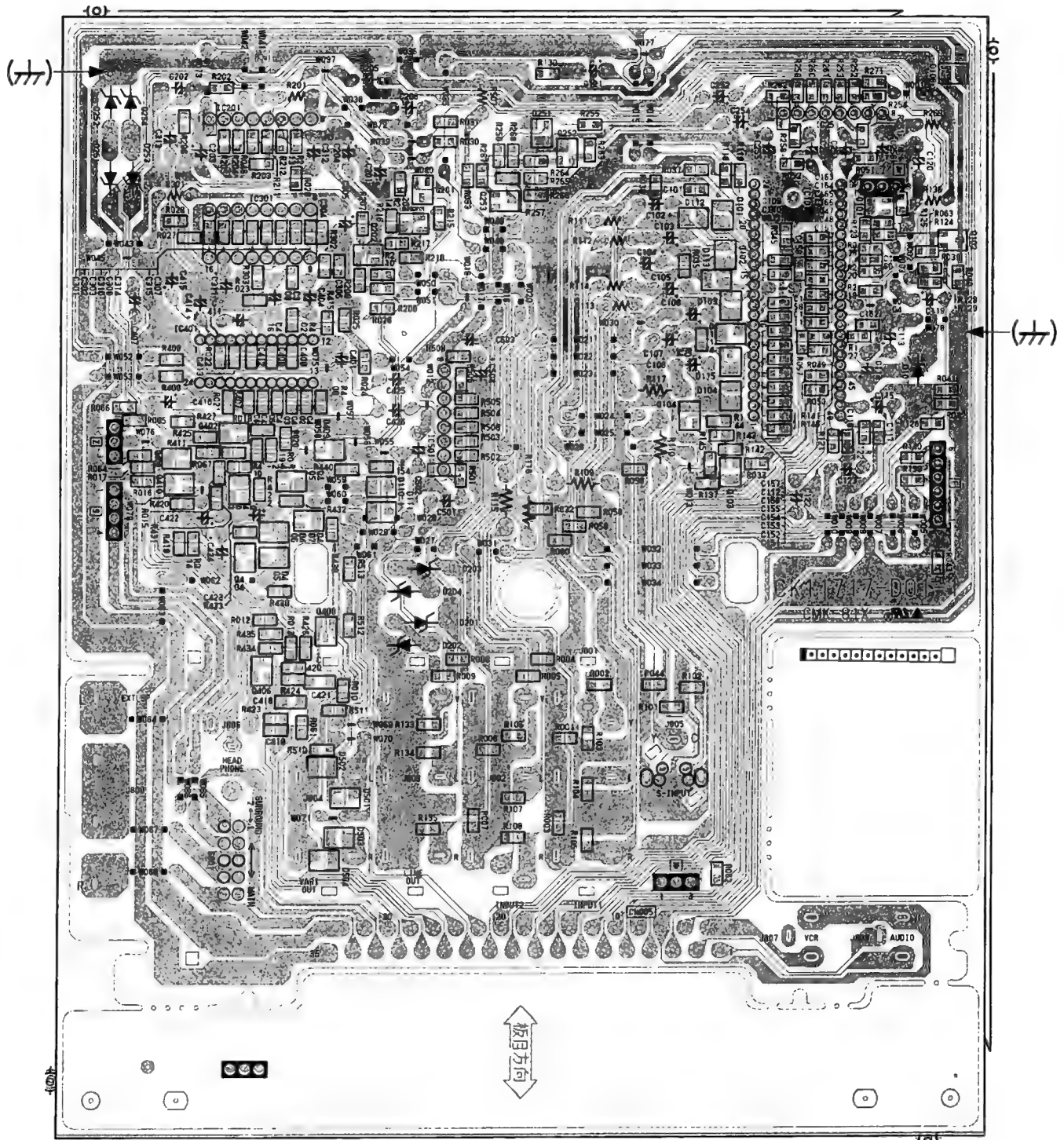
[SGX3018A(H2)]

(Magnification Rate 87%)

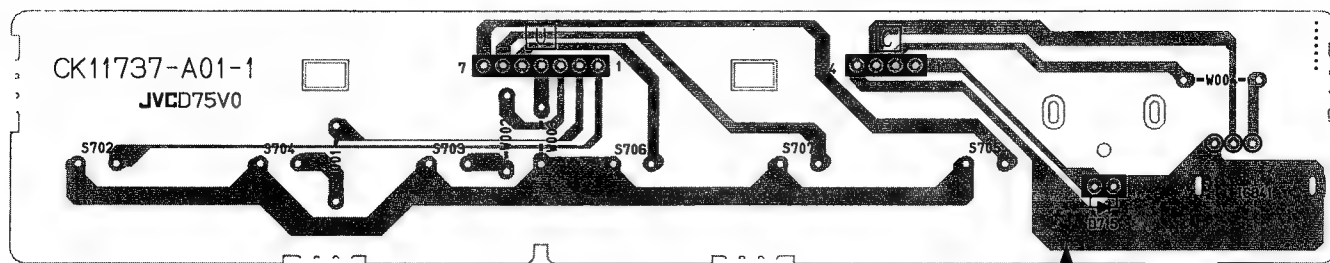


(Magnification Rate 95%)

↑ TOP



(Magnification Rate 100%)



FRONT



(+)

PARTS LIST

CAUTION

- The parts marked  are very important for the safety. When replacing these parts, be sure to use specified ones to secure the safety and performance.
 - The module circuit board is supplied together with the assembly, but the parts which do not have the drawing in this Parts List, P. W. Board Ass'y and the Parts No. columns of which are filled with lines — . will not be supplied.
 - As a rule, the resistors and capacitors which are indicated as shown in (NOTE 2) "HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS" are not shown in the list of the parts on the board.
- When ordering the service parts, confirm the resistance/rated power, capacitance/rated voltage, and type of the parts, then order by the part No. indicated according to (NOTE 2).

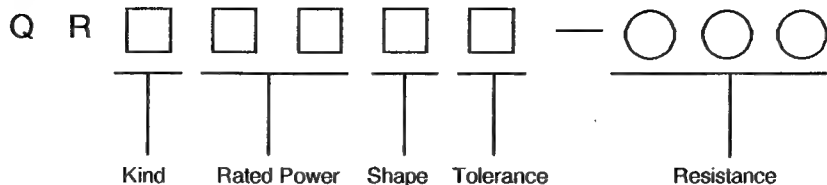
(NOTE 1) ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
± 1%	± 2%	± 5%	± 10%	± 20%	± 30%	+ 30%	+ 50%	+ 80%	+ 100%
						- 10%	- 10%	- 20%	- 0%

(NOTE 2) HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS

■ RESISTOR



Symbol	Part Name
C	COMP.R
D	C R
S	CH MG R

Symbol	Rated Power
0 1	1 w
1 2	1/2 w
1 4	1/4 w
1 6	1/6 w
1 8	1/8 w

Symbol	Shape
1	Straight lead
8	Chip

Indicate with first two-figure expressed by Ω and following 0.
 please note that, in case of resistance less than 10Ω , a letter "R" will be effective as point.

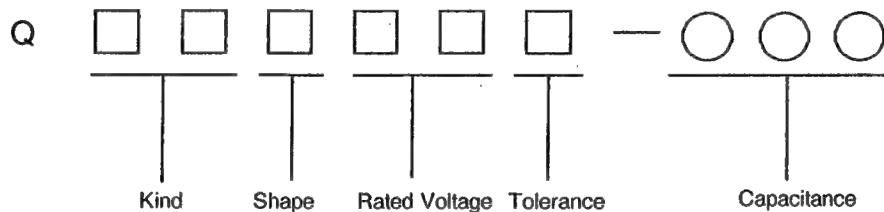
EX.

$$2.2 \Omega = 2R2$$

$$470 \Omega = 47 \times 10^1 \rightarrow 471$$

$$150k\Omega = 15 \times 10^4 \rightarrow 154$$

■ CAPACITOR



Symbol	Part Name
CS	C CAP.
CS	CH C CAP.
ET	E CAP.
FM	M CAP.

	5Figure	0	1	2
	6Figure			
A			10V	100V
C			16V	160V
D				200V
E			25V	250V
H			50V	500V
J		6.3V	63V	
V			35V	

Indicate with first two-figure expressed by pF and following 0.

Please note that, in case of capacitance less than 10 pF a letter "R" will be effective as point.

EX

$$5\text{pF} = 5R0$$

$$1000\text{pF} = 10 \times 10^2 \rightarrow 102$$

$$47\mu\text{F} = 47 \times 10^6 \rightarrow 476$$

Symbol	Shape
1	Straight lead
1	Leads in the same direction
8	Chip
A	Leads in the same direction (compact part)

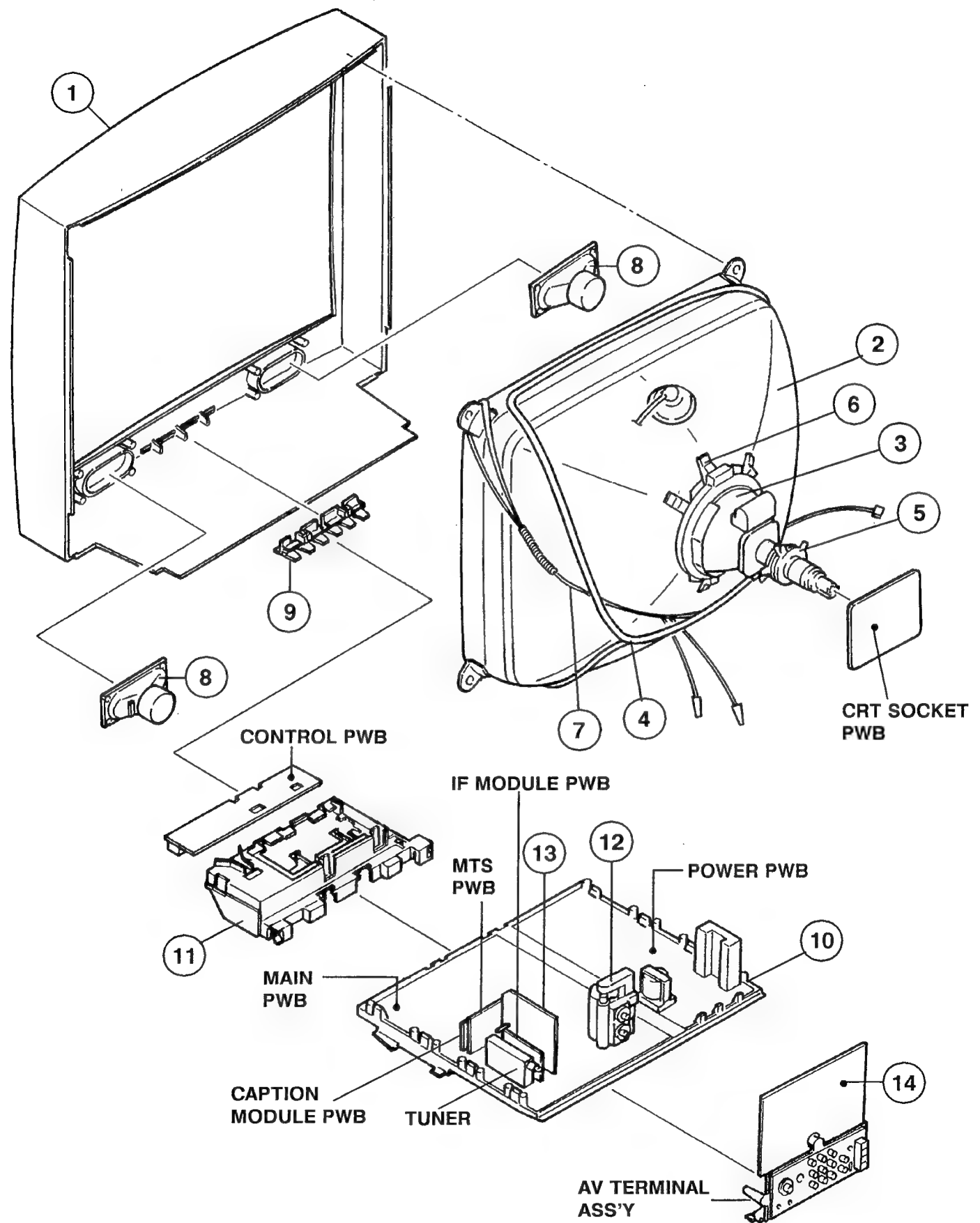
USING P.W. BOARD

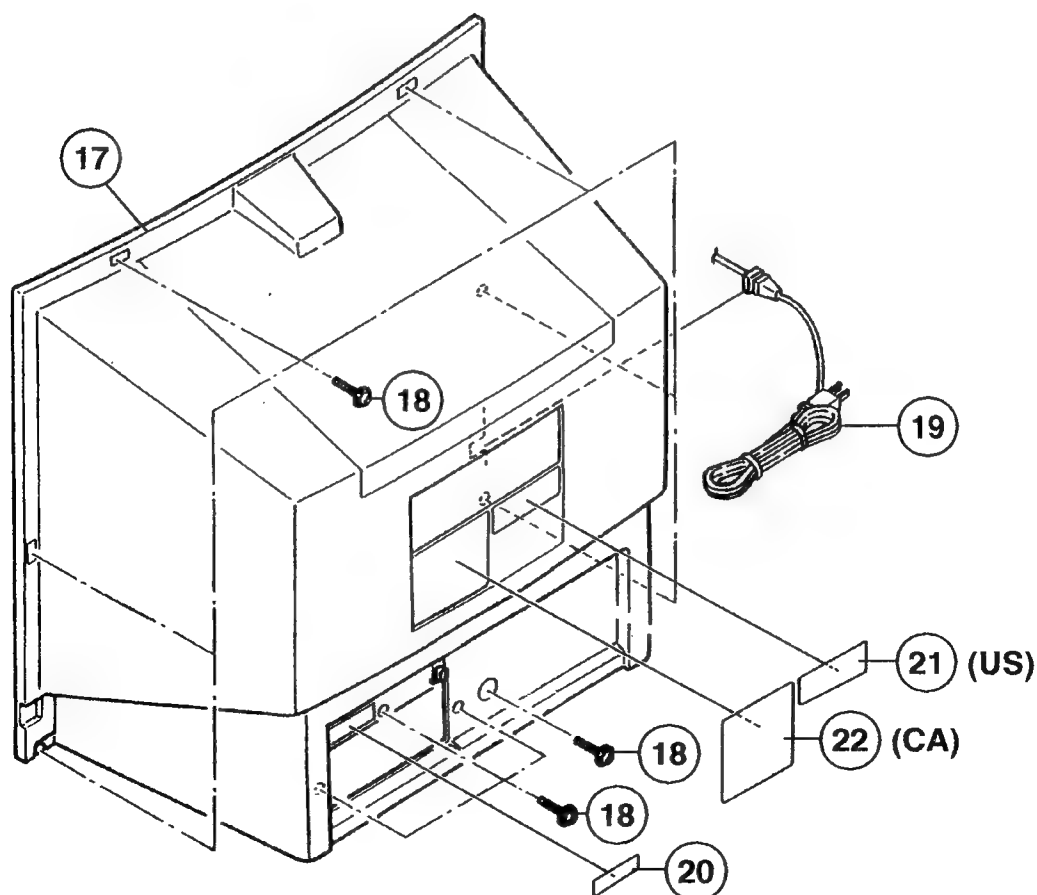
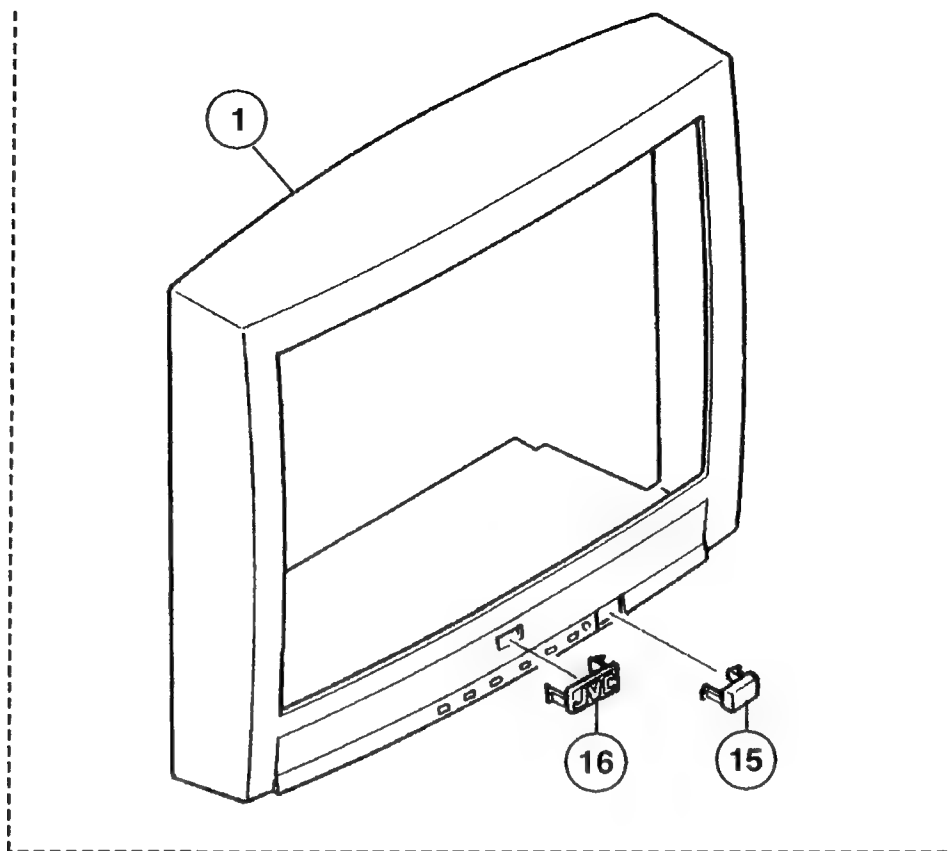
P.W.B. ASS'Y \ Model	America Models [US]	Canada Models [CA]
	AV-27BP4	AV-27BP4
MAIN P.W.B. ASS'Y	SGX1021A(H2)	SGX1513A(H2)
CRT SOCKET P.W.B. ASS'Y	SGX3018A(H2)	SGX3018A(H2)
FRONT CONTROL P.W.B. ASS'Y	SGX4003A(H2)	SGX4003A(H2)
AV TERMINAL P.W.B. ASS'Y	SGX-8003A	SGX-8003A
POWER P.W.B. ASS'Y	SGX9018A(H2)	SGX9505A(H2)
MTS P.W.B. ASS'Y	SGY6002A(H2)	SGY6002A(H2)
IF MODULE P.W.B. ASS'Y	SGX-F006A-H2	SGX-F006A-H2
PIP MODULE P.W.B. ASS'Y	SGX-P001A9	SGX-P001A9
CAPTION MODULE P.W.B. ASS'Y	SGXT004A(H2)	SGXT004A(H2)

EXPLODED VIEW PARTS LIST

△ Ref.No.	Part No.	Part Name	Description	Local
1	CM12414-C01-MA	FRONT CABINET		*
△ 2	A68KRQ88X(D)	PICTURE TUBE(C)	V01	*
△ 3	CE20237-00B	DEF YOKE	DY01	*
△ 4	CE41329-00CJ2	DEGAUSSING COIL	L01	*
5	A75034-B	P.C.MAGNET		
6	CE41596-00AJ1	WEDGE ASSY	(× 4)	*
7	CHGB0003-0C-FA	BRAIDED ASSY		*
△ 8	CEBSN12D-05KJ3	CONE SPEAKER	(× 2) SP01, SP02	*
9	CM35776-001-H	PUSH KNOB		*
10	CM12448-001-VA	CHASSIS BASE		*
11	CM22670-001-A	CONTROL BASE		*
△ 12	CJ27898-00AJ1	FBT	T1551	*
13	SGX-P001A9	PIP MODULE		
14	SGX-8003A	AV TERMI.PB ASSY		
15	CM35775-A01-H	REMOCON WINDOW		*
16	CM43094-006-H	JVC MARK		*
17	CM12415-B01-MA	REAR COVER		*
18	GBSB4016N	TAPPING SCREW	(× 10)	*
△ 19	QMP14C0-200J3	POWER CORD		*
20	CM47144-001-A	SP WARNING LABEL		*
21	CM44889-003-A	RATING LABEL	(US)	*
22	CM20925-011-A	RATING LABEL	(CA)	*

EXPLODED VIEW





PRINTED WIRING BOARD PARTS LIST

Regarding the main PW Board Ass'y [SGX1513A(H2)] for the model for canada, refer to page 25.

MAIN PW BOARD ASS'Y (SGX1021A(H2)) [US]

△ Symbol No.	Part No.	Part Name	Description	Local
VARIABLE RESISTOR				
R1113	QVPE611-203HZ	V R(NOISE)	20k Ω B	
R1281	QVPA601-471J5	V R(COMB)	470 Ω B	
R1355	QVPE611-103HZ	V R(PIP.PICTURE)	10k Ω B	
R1358	QVPE611-103HZ	V R(PIP.R.BIAS)	10k Ω B	
R1361	QVPE611-103HZ	V R(PIP.B.BIAS)	10k Ω B	
R1364	QVPE611-103HZ	V R(PIP.BRIGHT)	10k Ω B	
R1403	QVPE611-203HZ	V R(V.HEIGHT)	20k Ω B	
R1406	QVPE611-503HZ	V R(V.LINE)	50k Ω B	
R1513	QVPE611-201HZ	V R(H.CENTER)	200 Ω B	
R1601	QVPE611-103HZ	V R(SEPARATION)	10k Ω B	
R1899	QVPE610-104H	TRIM.R(PIP H.POS)	100k Ω B	
RESISTOR				
R1001	QRD141J-150SY	C R	15 Ω 1/4W J	
R1115	QRD141J-150SY	C R	15 Ω 1/4W J	
R1213	QRD123J-391SX	C R	390 Ω 1/2W J	
R1214	QRD143J-150SX	C R	15 Ω 1/4W J	
R1230	QRG019J-270S	OM R	27 Ω 1W J	
R1404	QRX019J-1R2S	MF R	1.2 Ω 1W J	
△ R1410	QRC121K-331Z	COMP.R	330 Ω 1/2W K	
△ R1411	QRD161J-5R6Y	C R	5.6 Ω 1/6W J	
△ R1416	QRD121J-821SY	C R	820 Ω 1/2W J	
R1417	QRD121J-122SY	C R	1.2k Ω 1/2W J	
R1501	QRG029J-223	OM R	22k Ω 2W J	
R1506	QRV141F-2701AY	MF R	2.7k Ω 1/4W F	
R1508	QRV141F-9101AY	MF R	9.1k Ω 1/4W F	
R1543	QRD123J-562SX	C R	5.6k Ω 1/2W J	
R1544	QRG05AJ-562	OM R	5.6k Ω 5W J	
R1546	QRG029J-152	OM R	1.5k Ω 2W J	
△ R1547	QRG029J-391A	OM R	390 Ω 2W J	
△ R1552	QRD121J-4R7SY	C R	4.7 Ω 1/2W J	
△ R1553	QRD161J-243Y	C R	24k Ω 1/6W J	
△ R1554	QRD161J-273Y	C R	27k Ω 1/6W J	
△ R1557	QRX039J-3R3A	MF R	3.3 Ω 3W J	
△ R1558	QRX039J-3R3A	MF R	3.3 Ω 3W J	
△ R1561	QRD149J-1R0S	C R	1.0 Ω 1/4W J	
△ R1565	QRD121J-123SY	C R	12k Ω 1/2W J	
△ R1571	QRG029J-562A	OM R	5.6k Ω 2W J	
R1793	QRD121J-151SY	C R	150 Ω 1/2W J	
R1924	QRD121J-683SY	C R	68k Ω 1/2W J	
CAPACITOR				
C1001	QFLC1HK-103MZ	M CAP.	0.01 μ F 50V K	
C1111	QEKC1HM-104GMZ	E CAP.	0.1 μ F 50V M	
C1209	QFLC1HK-103MZ	M CAP.	0.01 μ F 50V K	
C1243	QEN41HM-335J3	BP E CAP.	3.3 μ F 50V M	
C1253	QFV71HJ-104MZ	TF CAP.	0.1 μ F 50V J	
C1254	QFLC1HK-103MZ	M CAP.	0.01 μ F 50V K	
C1257	QCS31HJ-270ZJ5	CH C CAP.	27 p F 50V J	
C1272	QFN31HK-472ZJ1	M CAP.	4700 p F 50V K	
C1313-14	QFLC1HK-223MZ	M CAP.	0.022 μ F 50V K	
C1316	QEN61HM-225ZJ3	BP E CAP.	2.2 μ F 50V M	
C1318	QFN31HK-102ZJ1	M CAP.	1000 p F 50V K	
C1356	QFLC1HK-103MZ	M CAP.	0.01 μ F 50V K	
C1402	QEH1CM-107MZ	E CAP.	100 μ F 16V M	
C1403	QFLC1HK-103MZ	M CAP.	0.01 μ F 50V K	
C1404	QEE61VK-105BZ	TAN.CAP.	1 μ F 35V K	
C1405	QFV71HJ-564MZ	TF CAP.	0.56 μ F 50V J	
△ C1407	QEH1VM-476MZ	E CAP.	47 μ F 35V M	
C1409	QCS31HJ-100ZJ5	CH C CAP.	10 p F 50V J	

△ Ref.No.	Part No.	Part Name	Description	Local
C A P A C I T O R				
△ C1410	QEH1VM-477MZ	E CAP.	470 μ F 35V	M
C1411	QFLC2AK-333MZ	M CAP.	0.033 μ F 100V	K
C1412	QFLC1HK-393MZ	M CAP.	0.039 μ F 50V	K
C1451	QEN61HM-105ZJ3	BP E CAP.	1 μ F 50V	M
C1452	QFN31HJ-122ZJ1	M CAP.	1200 p F 50V	J
C1454	QFN31HJ-472ZJ1	M CAP.	4700 p F 50V	J
C1502	QFLC1HK-223MZ	M CAP.	0.022 μ F 50V	K
C1505	QEN61HM-106ZJ3	BP E CAP.	10 μ F 50V	M
C1506	QFLC1HK-153MZ	M CAP.	0.015 μ F 50V	K
C1507	QFLC1HK-273MZ	M CAP.	0.027 μ F 50V	K
C1508	QFLC1HJ-153MZ	M CAP.	0.015 μ F 50V	J
C1509	QFN31HJ-152ZJ1	M CAP.	1500 p F 50V	J
C1511	QEN61HM-105ZJ3	BP E CAP.	1 μ F 50V	M
C1543	QEH2EM-225MZ	E CAP.	2.2 μ F 250V	M
△ C1544	QFZ0117-2001S	MPP CAP.	2000 p F 1.4kVH $\pm 2.5\%$	
△ C1545	QFZ0117-6201S	MPP CAP.	6200 p F 1.4kVH $\pm 2.5\%$	
△ C1546	QFZ0117-6201S	MPP CAP.	6200 p F 1.4kVH $\pm 2.5\%$	
△ C1547	QFN32DK-104J1	M CAP.	0.1 μ F 200V	K
△ C1548	QFZ0119-434S	MPP CAP.	0.43 μ F 200V $\pm 3\%$	
C1549-50	QEM61HK-475MZ	E CAP.	4.7 μ F 50V	K
△ C1551	QETC1HM-107ZJ5	E CAP.	100 μ F 50V	M
△ C1552	QFLC1HK-103MZ	M CAP.	0.01 μ F 50V	K
C1554	QETC1CM-476ZJ5	E CAP.	47 μ F 16V	M
△ C1555	QEH1EM-477MZ	E CAP.	470 μ F 25V	M
△ C1556	QETB1VM-228J3	E CAP.	2200 μ F 35V	M
C1557	QFN31HK-222ZJ1	M CAP.	2200 p F 50V	K
△ C1558	QETB2EM-336J5	E CAP.	33 μ F 250V	M
C1563	QFLC2AJ-393MZ	M CAP.	0.039 μ F 100V	J
△ C1615	QETB1VM-108J5	E CAP.	1000 μ F 35V	M
C1616	QFV71HJ-124MZ	TF CAP.	0.12 μ F 50V	J
△ C1617	QETB1VM-108J5	E CAP.	1000 μ F 35V	M
C1618	QFV71HJ-124MZ	TF CAP.	0.12 μ F 50V	J
△ C1619	QETB1VM-108J5	E CAP.	1000 μ F 35V	M
C1701	QFLC1HK-333MZ	M CAP.	0.033 μ F 50V	K
C1713	CECN003-101	NET CAP.		
C1720	QEN61HM-105ZJ3	BP E CAP.	1 μ F 50V	M
C1730	QFLC1HK-223MZ	M CAP.	0.022 μ F 50V	K
C1731	QFLC1HK-683MZ	M CAP.	0.068 μ F 50V	K
C1871	QFLC1HJ-103MZ	M CAP.	0.01 μ F 50V	J
C1873	QFLC1HJ-103MZ	M CAP.	0.01 μ F 50V	J
C1874	QFN31HK-102ZJ1	M CAP.	1000 p F 50V	K
△ C1903	QETB2CM-227J5	E CAP.	220 μ F 160V	M
T R A N S F O R M E R				
T1271	CE40176-001J1	DL P TRANS		
T1541	CE42034-001J1	HOR DRIVE TRANS		
C O I L				
L1251	CELP055-820Z	PEAKING COIL	82 μ H	
L1271	CELP055-220Z	PEAKING COIL	22 μ H	
L1272	CELP056-180Z	PEAKING COIL	18 μ H	
L1451	CELP055-561Z	PEAKING COIL	560 μ H	
△ L1542	CELL004-001	LINEARITY COIL		
△ L1543	CE40973-001J1	CHOKE COIL		
L1544-45	CE40107-001	CORD SLEEVE		
L1702	CELP056-220Z	PEAKING COIL	22 μ H	
L1705	CELP055-4R7Z	PEAKING COIL	4.7 μ H	
L1801	CELP055-1R0Z	PEAKING COIL	1.0 μ H	
L1851	CELP055-270Z	PEAKING COIL	27 μ H	
D I O D E				
D1001	MA4330(L)-T2	ZENER DIODE		
D1201-02	1SS133-T2	SI.DIODE		
D1241-42	1SS133-T2	SI.DIODE		
D1243	RD5.6JS(B3)-T2	ZENER DIODE		
D1251	MA4130(M)-T2	ZENER DIODE		
D1252-53	RD13JS(B)-T2	ZENER DIODE		

△ Ref.No.	Part No.	Part Name	Description	Local
D I O D E				
	D1301-06	1SS133-T2	SI.DIODE	
△	D1401	1SR35-100A-T2	SI.DIODE	
△	D1402	RD75E(B)-T5	ZENER DIODE	
	D1501-03	1SS133-T2	SI.DIODE	
	D1504	MA4068(N)C1-T2	ZENER DIODE	
	D1505	1SS81-T2	SI.DIODE	
△	D1506	MA4068(N)C1-T2	ZENER DIODE	
△	D1508	MA4068(N)C1-T2	ZENER DIODE	
	D1509	1SS133-T2	SI.DIODE	
△	D1541	ERD07-15-L	SI.DIODE	
	D1542	RU3AM-LFB1	SI.DIODE	
△	D1551	1SS81-T2	SI.DIODE	
	D1552	RGP10J(C1)-T3	SI.DIODE	
△	D1553	RGP10J-T3	SI.DIODE	
△	D1554	RGP10J-T3	SI.DIODE	
△	D1555	RH1S-T3	SI.DIODE	
	D1556	RD12E(B1)-T2	ZENER DIODE	
	D1557	1SS82-T2	SI.DIODE	
	D1601-02	RD33E(B1)-T2	ZENER DIODE	
	D1631	RD9.1E(B2)-T2	ZENER DIODE	
	D1712-13	1SS133-T2	SI.DIODE	
	D1714-15	RD6.8ES(B3)-T2	ZENER DIODE	
	D1720-26	1SS133-T2	SI.DIODE	
	D1728-29	1SS133-T2	SI.DIODE	
	D1732-33	1SS133-T2	SI.DIODE	
	D1741-42	1SS133-T2	SI.DIODE	
	D1751-52	1SS133-T2	SI.DIODE	
	D1759	MA4062(M)-T2	ZENER DIODE	
	D1761-62	1SS133-T2	SI.DIODE	
	D1771-72	1SS133-T2	SI.DIODE	
	D1791-92	1SS133-T2	SI.DIODE	
	D1793	MA4062(H)-T2	ZENER DIODE	
	D1801	1SS133-T2	SI.DIODE	
	D1866	1SS133-T2	SI.DIODE	
T R A N S I S T O R				
	Q1201	2SA933S(QR)-T	SI.TRANSISTOR	
	Q1202	2SC1740S(QR)-T	SI.TRANSISTOR	
	Q1203	2SA673(C)-T	SI.TRANSISTOR	
	Q1204	2SC1740S(QR)-T	SI.TRANSISTOR	
	Q1241	2SC1740S(QR)-T	SI.TRANSISTOR	
	Q1251-54	2SC1740S(QR)-T	SI.TRANSISTOR	
	Q1451	2SC1740S(QR)-T	SI.TRANSISTOR	
	Q1501	2SA933S(QR)-T	SI.TRANSISTOR	
	Q1502	2SC1740S(QR)-T	SI.TRANSISTOR	
	Q1541	2SC2482(C1)-T	SI.TRANSISTOR	
△	Q1542	2SD2348-LB	SI.TRANSISTOR	H.OUT
	Q1701-02	2SC1740S(QR)-T	SI.TRANSISTOR	
	Q1703-04	2SB774(RS)-T	SI.TRANSISTOR	
	Q1741-42	2SC1740S(QR)-T	SI.TRANSISTOR	
	Q1743	2SA933S(QR)-T	SI.TRANSISTOR	
	Q1744	2SC1740S(QR)-T	SI.TRANSISTOR	
	Q1781	2SC1740S(Q)-T	SI TRANSISTOR	
	Q1782	2SA933S(QR)-T	SI.TRANSISTOR	
	Q1791	2SC2655(Y)-T	SI.TRANSISTOR	
	Q1851	2SA933S(QR)-T	SI.TRANSISTOR	
	Q1862	2SC1740S(QR)-T	SI.TRANSISTOR	
	Q1863	2SC3811(R)	SI.TRANSISTOR	
	Q1864-66	2SC1740S(QR)-T	SI.TRANSISTOR	
I C				
	IC1001	AN78L05-Y	I.C.	
	IC1201	VC2024Z	I.C.	
	IC1251	M52005P	I.C.(M)	
	IC1351	AN5352N	I.C.	
△	IC1401	LA7837	I.C.(MONO-ANA)	
△	IC1402	AN78L12-Y	I.C.	

△ Ref.No.	Part No.	Part Name	Description	Local
I C				
△ IC1551	AN78N05	I.C.(M)		
△ IC1601	MC13516T2	I.C.(MONO-ANA)		
IC1701	MN1873221JGV1	I.C.		
IC1702	MN1280-Q	I.C.(DIGI-MOS)		
IC1801	MN12C261D	I.C.(MEMORY-OTH)		
IC1802	M50253P	I.C.(M)		
O T H E R S				
	SGX-F006A-H2	IF MODULE		
	-----	MTS PB ASSY	(SGY6002A(H2))	
	SGXT002A(H2)	CAPTION MODULE		
CF1501	CSB503F38	CER.RESONATOR		
CF1701	CST4.00MGW-Z	CERAMIC RESONATO		
CN1005	CHA401N-35P-J	HQF PLUG		
DL1271	CE42383-001	DELAY LINE		
△ RB1551	QRZ0101-018	NET RESISTOR		
S1271	QSL6A13-C01	LEVER SWITCH	TINT COLOR	
S1401	QSL6A13-C01	LEVER SWITCH	V.CENTER SW	
S1707	QSL6A13-C01	LEVER SWITCH	VSM SERVICE SW	
△ TU1701	CEEM245-A03	TUNER	TU1701	
X1301	CE41651-001J1	X-TAL		

MAIN PW BOARD ASS'Y (SGX1513A(H2)) [CA]

Regarding the parts list for the main PW board Ass'y [SGX1513A(H2)] of the model for canada, only the different parts from those of the model [SGX1021A(H2)] are described. For further details regarding the other parts, refer to the parts list of the model [SGX1021A(H2)] described on page 22 through page 25.

△	SYMBOL No.	PART No.		PARTS NAME	REMARKS
		America Model [US] SGX1021A(H2)	Canada Model [CA] SGX1513A(H2)		
	D1728	1SS133-T2	—————	SI. DIODE	

CRT SOCKET PW BOARD ASS'Y (SGX3018A(H2))

△ Ref.No.	Part No.	Part Name	Description	Local
VARIABLE RESISTOR				
R3319	QVPA803-201M	V R(R.DRIVE)	200 Ω B	
R3320	QVPA803-201M	V R(G.DRIVE)	200 Ω B	
R3339	QVPA803-502M	V R(R.CUT OFF)	5k Ω B	
R3340	QVPA803-502M	V R(G.CUT OFF)	5k Ω B	
R3341	QVPA803-502M	V R(B.CUT OFF)	5k Ω B	
RESISTOR				
△ R3305	QRG029J-123	OM R	12k Ω 2W J	
△ R3307	QRG029J-123	OM R	12k Ω 2W J	
△ R3309	QRG029J-123	OM R	12k Ω 2W J	
R3325-27	QRC121K-152Z	COMP.R	1.5k Ω 1/2W K	
△ R3363	QRC121K-225EZ	COMP.R	2.2M Ω 1/2W K	
CAPACITOR				
C3361	QFH63BK-223M	MM CAP.	0.022 μ F 1250V K	
△ C3363	QETB2EM-105J5	E CAP.	1 μ F 250V M	
COIL				
△ L3307	CELC901-054J6	COIL		
DIODE				
D3301-02	1SS133-T2	SI.DIODE		
D3310-13	1SS133-T2	SI.DIODE		
D3361	DFM1A4	SI.DIODE		
TRANSISTOR				
Q3301	2SC1740S(R)-T	SI.TRANSISTOR	R.OUT	
Q3302	2SC1740S(R)-T	SI.TRANSISTOR	G.OUT	
Q3303	2SC1740S(R)-T	SI.TRANSISTOR	B.OUT	
Q3304	2SC3271(NP)-C1	SI.TRANSISTOR	R.OUT	
Q3305	2SC3271(NP)-C1	SI.TRANSISTOR	G.OUT	
Q3306	2SC3271(NP)-C1	SI.TRANSISTOR	B.OUT	
Q3307-08	2SC2878(B)-T	SI.TRANSISTOR		
Q3311	2SC1740S(QR)-T	SI.TRANSISTOR		
Q3312	2SA933S(QR)-T	SI.TRANSISTOR		
Q3313	2SC1740S(QR)-T	SI.TRANSISTOR		
Q3314	2SA933S(QR)-T	SI.TRANSISTOR		
Q3315	2SC1740S(QR)-T	SI.TRANSISTOR		
Q3316	2SA933S(QR)-T	SI.TRANSISTOR		
OTHERS				
△ S3301	CE41603-002J1	CRT SOCKET		
	QSL6A13-C01	LEVER SWITCH	SERVICE SW	

FRONT CONTROL PW BOARD ASS'Y (SGX4003A(H2))

△ Ref.No.	Part No.	Part Name	Description	Local
DIODE				
D4715	GL2PR6	L.E.D.(RED)		
I C				
IC4841	GP1U781Q	IFR DETECT UNIT		
OTHERS				
S4702	QSP1A11-C19Z	PUSH SWITCH	FUNCTION	
S4703	QSP1A11-C19Z	PUSH SWITCH	UP	
S4704	QSP1A11-C19Z	PUSH SWITCH	DOWN	
S4705	QSP1A11-C19Z	PUSH SWITCH	POWER	
S4706	QSP1A11-C19Z	PUSH SWITCH	VOL ▽	
S4707	QSP1A11-C19Z	PUSH SWITCH	VOL △	

AV TERMINAL PW BOARD ASS'Y (SGX-8003A)

△ Ref.No.	Part No.	Part Name	Description	Local
R E S I S T O R				
R8111	QRD123J-102SX	C R	1k Ω 1/2W	J
R8112	QRD123J-221SX	C R	220 Ω 1/2W	J
R8113	QRD123J-102SX	C R	1k Ω 1/2W	J
R8114	QRD123J-221SX	C R	220 Ω 1/2W	J
R8136	QRD123J-150SX	C R	15 Ω 1/2W	J
R8301	QRD123J-100SX	C R	10 Ω 1/2W	J
C A P A C I T O R				
C8101	NCB21HK-103AY	CHIP CAP.	0.01 μ F 50V	K
C8102	QEK1CM-105GMZ	E CAP.	1 μ F 50V	M
C8103	QEK1CM-106GMZ	E CAP.	10 μ F 16V	M
C8104	QEK1CM-105GMZ	E CAP.	1 μ F 50V	M
C8105	QEK1CM-106GMZ	E CAP.	10 μ F 16V	M
C8106-07	QEK1CM-105GMZ	E CAP.	1 μ F 50V	M
C8108	QEK1CM-106GMZ	E CAP.	10 μ F 16V	M
C8109-12	NCT03CH-101AY	CHIP CAP.	100 p F 1600V	H
C8113	QEK1CM-226GMZ	E CAP.	22 μ F 16V	M
C8114	QEK1CM-107MZ	E CAP.	100 μ F 16V	M
C8115	QEK1CM-106GMZ	E CAP.	10 μ F 16V	M
C8116-17	NCT03CH-271AY	CHIP CAP.	270 p F 1600V	H
C8120	QEK1CM-107MZ	E CAP.	100 μ F 16V	M
C8121	QEU51AM-108M	E CAP.	1000 μ F 10V	M
C8122-23	QEPB1EM-335M	BP E CAP.	3.3 μ F 25V	M
C8151-61	NCB21HK-102AY	CHIP CAP.	1000 p F 50V	K
C8164-66	NCB21HK-102AY	CHIP CAP.	1000 p F 50V	K
C8203-04	QEK1CM-105GMZ	E CAP.	1 μ F 50V	M
C8252	QEK1CM-105GMZ	E CAP.	1 μ F 50V	M
C8254	QEK1CM-105GMZ	E CAP.	1 μ F 50V	M
C8301	NCT03CH-152AY	CHIP CAP.	1500 p F 1600V	H
C8302-03	NCB21HK-332AY	CHIP CAP.	3300 p F 50V	K
C8304	NCT03CH-152AY	CHIP CAP.	1500 p F 1600V	H
C8305	QEK1CM-107MZ	E CAP.	100 μ F 16V	M
C8306	NCT03CH-331AY	CHIP CAP.	330 p F 1600V	H
C8307	NCT03CH-101AY	CHIP CAP.	100 p F 1600V	H
C8308	NCT03CH-331AY	CHIP CAP.	330 p F 1600V	H
C8309	NCT03CH-101AY	CHIP CAP.	100 p F 1600V	H
C8310	NCB21EK-104AY	CHIP CAP.	0.1 μ F 25V	K
C8311	QEK1CM-476MZ	E CAP.	47 μ F 16V	M
C8312-13	QEPC1CM-106MZ	BP E CAP.	10 μ F 16V	M
C8401	QEPC1HM-225MZ	BP E CAP.	2.2 μ F 50V	M
C8402-03	NCB21EK-104AY	CHIP CAP.	0.1 μ F 25V	K
C8404	QEPC1HM-105GMZ	BP E CAP.	1 μ F 50V	M
C8405-06	NCB21EK-104AY	CHIP CAP.	0.1 μ F 25V	K
C8407	QEK1CM-105GMZ	E CAP.	1 μ F 50V	M
C8408-09	NCB21EK-104AY	CHIP CAP.	0.1 μ F 25V	K
C8410	QEK1CM-105GMZ	E CAP.	1 μ F 50V	M
C8411	QEPC1HM-225MZ	BP E CAP.	2.2 μ F 50V	M
C8412-13	NCB21HK-272AY	CHIP CAP.	2700 p F 50V	K
C8414	QEK1CM-476MZ	E CAP.	47 μ F 16V	M
C8415	QEK1CM-106GMZ	E CAP.	10 μ F 16V	M
C8416	QEPC1HM-105GMZ	BP E CAP.	1 μ F 50V	M
C8418	NCF11HZ-224AY	CHIP C CAP.	0.22 μ F 50V	Z
C8419-20	NCT03CH-221AY	CHIP CAP.	220 p F 1600V	H
C8421	NCF11HZ-224AY	CHIP C CAP.	0.22 μ F 50V	Z
C8422	QEK1CM-106GMZ	E CAP.	10 μ F 16V	M
C8423-24	QEK1CM-107MZ	E CAP.	100 μ F 16V	M
C8425-26	QEPC1CM-106MZ	BP E CAP.	10 μ F 16V	M
C8501-02	QEPC1HM-105GMZ	BP E CAP.	1 μ F 50V	M
C8503	QEK1CM-107MZ	E CAP.	100 μ F 16V	M
C8504	QEK1CM-336MZ	E CAP.	33 μ F 16V	M
D I O D E				
D8101-04	MA3120-W	ZENER DIODE		
D8106	MA3120-W	ZENER DIODE		
D8107	RD9.1E(B2)-T2	ZENER DIODE		

△ Ref.No.	Part No.	Part Name	Description	Local
D I O D E				
D8110-11	MA151K-W	DIODE		
D8112-15	MA3120-W	ZENER DIODE		
D8201-04	RD6.8E(B3)-T2	ZENER DIODE		
D8251-54	RD6.8E(B3)-T2	ZENER DIODE		
D8405-07	MA151K-W	DIODE		
D8501-04	MA3068(M)-W	ZENER DIODE		
T R A N S I S T O R				
Q8102	2SA1022(BC)-W	SI. TRANSISTOR		
Q8103	2SC2778(BC)-W	SI. TRANSISTOR		
Q8104	2SA1022(BC)-W	SI. TRANSISTOR		
Q8201	DTA144TK-W	DIGI TRANSISTOR		
Q8202-03	DTC363TK-W	DIGI TRANSISTOR		
Q8251-52	DTC363TK-W	DIGI TRANSISTOR		
Q8253	DTA144TK-W	DIGI TRANSISTOR		
Q8402-03	DTC363TK-W	DIGI TRANSISTOR		
Q8404	2SA1022(BC)-W	SI. TRANSISTOR		
Q8405-06	2SC2778(BC)-W	SI. TRANSISTOR		
I C				
IC8101	CXA1545AS	I.C.(MONO-ANA)		
IC8301	VUC2003	I.C.(MONO-ANA)		
IC8401	TDA7314J	I.C.		
IC8501	XRA15218N	I.C.(MONO-ANA)		
O T H E R S				
	CM22678-A01-V0	TERMINAL BOARD		
CN8005	CHA401N-35R-J	HQF SOCKET		
J8801	CEMN050-001	PIN JACK		
J8802	CEMN044-001	PIN JACK		
J8803	CEMN045-001	PIN JACK		
J8804	CEMN057-001	PIN JACK		
J8805	QMCC008-C01	DIN JACK		
J8806	AX49607-024	MINI JACK		
J8807-08	AX49607-020	MINI JACK		
J8809	CEMT016-001	PUSH TERMINAL		
S8801	QSS4C23-C06	SLIDE SWITCH		

POWER PW BOARD ASS'Y (SGX9018A(H2)) [US] / (SGX9505A(H2)) [CA]

△ Ref.No.	Part No.	Part Name	Description	Local
R E S I S T O R				
△ R9901	QRF104K-1R0	UNF R	1.0 Ω 10W K	
R9905	QRM055K-R10	MP R	0.1 Ω 5W K	
R9906-07	QRG039J-330	OM R	33 Ω 3W J	
R9908	QRG029J-330	OM R	33 Ω 2W J	
△ R9913	QRG019J-223S	OM R	22k Ω 1W J	
R9914	QRD149J-101S	C R	100 Ω 1/4W J	
R9923	QRD121J-561SY	C R	560 Ω 1/2W J	
R9924	QRD129J-561S	C R	560 Ω 1/2W J	
R9930	QRG019J-221S	OM R	220 Ω 1W J	
R9931	QRG029J-331A	OM R	330 Ω 2W J	
△ R9990	ERZ-C10DK361U	ZINC N R		
△ R9992	QRC121K-275EZ	COMP.R	2.7M Ω 1/2W K	
C A P A C I T O R				
△ C9910	QCZ9033-102A	C CAP.	1000 p FAC125V K	
△ C9911	QCZ9033-102A	C CAP.	1000 p FAC125V K	
△ C9912	QCZ9033-102A	C CAP.	1000 p FAC125V K	
△ C9913	QCZ9033-102A	C CAP.	1000 p FAC125V K	
△ C9914	QEU72DM-567M	E CAP.	560 μ F 200V M	
C9917	QFN32DK-333J1	M CAP.	0.033 μ F 200V K	
C9918	QEH2AM-107MZ	E CAP.	100 μ F 100V M	
△ C9919	QEH1HM-336MZ	E CAP.	33 μ F 50V M	

△ Ref.No.	Part No.	Part Name	Description	Local
R E S I S T O R				
	C9922	QFN31HJ-272ZJ1	M CAP.	2700 p F 50V J
△	C9931	QCZ0128-681A	C CAP.	680 p F 500V K
△	C9932	QCY31HK-331ZJ5	CH C CAP.	330 p F 50V K
△	C9933	QCZ0128-332A	C CAP.	3300 p F 500V K
△	C9934	QCY31HK-102ZJ5	CH C CAP.	1000 p F 50V K
△	C9935	QEZ0179-337M	E CAP.	330 μ F 200V M
△	C9937	QETB1VM-338J5	E CAP.	3300 μ F 35V M
△	C9939	QCY31HK-331ZJ5	CH C CAP.	330 p F 50V K
△	C9941	QETB1VM-108J5	E CAP.	1000 μ F 35V M
△	C9944	QETC1EM-476ZJ3	E CAP.	47 μ F 25V M
△	C9990	QCZ9029-103M	C CAP.	0.01 μ FAC125V M
△	C9991	QFZ9036-104M	M F CAP.	0.1 μ FAC250V M
△	C9992	QFZ9036-473M	M.F.CAP.	0.047 μ FAC250V M
△	C9993	QFZ9036-473M	M.F.CAP.	0.047 μ FAC250V M
△	C9994	QCZ9033-222A	C CAP.	2200 p FAC125V M
△	C9995	QCZ9033-222A	C CAP.	2200 p FAC125V M
△	C9996	QCZ9033-222A	C CAP.	2200 p FAC125V M
△	C9997	QCZ9033-222A	C CAP.	2200 p FAC125V M
△	C9998	QFZ9036-473M	M.F.CAP.	0.047 μ FAC250V M
△	C9999	QCZ9029-103M	C CAP.	0.01 μ FAC125V M
T R A N S F O R M E R				
△	T9901	CE42395-001J1	SWITCH.TRANSF.	
△	T9902	CE41741-001J1	POWER TRANSF	
C O I L				
△	L9901	CELC901-100J6	HEATER CHOKE	
△	L9902	CELC901-050J6	HEATER CHOKE	
	L9903-04	CE40107-001	CORD SLEEVE	
	L9909	CE41923-001	CORE SLEEVE	
	L9910	CE41695-00A	BEADS INDUCTOR	
D I O D E				
△	D9901	S4VB40-L15	BRIDGE DIODE	
	D9903	RGP10J(C1)-T3	SI.DIODE	
	D9905	V19E-T3	SI.DIODE	
	D9906	RD12E(B2)-T2	ZENER DIODE	
△	D9921	RU4AM-C1	SI DIODE	
△	D9922	RU4YX-C1	SI.DIODE	
△	D9923	U19E-C2	SI.DIODE	
	D9931	S1WB(A)10	SI.DIODE	
	D9932-33	1SS133-T2	SI.DIODE	
△	D9934	1SS133-T2	SI.DIODE	
T R A N S I S T O R				
	Q9901	2SA933S(QR)-T	SI.TRANSISTOR	
	Q9931	2SC1959(Y)-T	SI.TRANSISTOR	
I C				
△	IC9901	STR-S6301	I.C.(POWER REGULATOR)	
△	IC9902	UPC2412HF	I.C.(MONO-ANA)	
△	IC9921	SE135N	I.C.(HYBRID)	
O T H E R S				
△	F9991	QMF61U1-4R0S	FUSE	4.0A
△	LF9991	CE40248-00B	LINE FILTER	
△	LF9992	CE41506-00BJ1	LINE FILTER	
△	PC9902	TLP621(B)	I.C(PH.COUPLER)	
△	RY9901	CESK023-001	RELAY	
△	TH9901	CEKP001-001J1	P.THERMISTOR	

MTS PW BOARD ASS'Y (SGY6002A(H2)) with in MAIN PW BOARD ASS'Y.

This pw board are supplied as assemblies.

The component parts only the PW boards are available only when the parts are listed in the "PRINTED WIRING BOARD PARTS LIST".

△ Ref.No.	Part No.	Part Name	Description	Local
VARIABLE RESISTOR				
R6626	QVPE604-103J4	V R(MOD.F.300Hz)	10k Ω B	
R6627	QVPE604-502J4	V R(MOD.F.300Hz)	5k Ω B	
R6628	QVPC609-303H	V R(FILTER)	30k Ω B	
R6629	QVPC609-503H	V R(VCO)	50k Ω B	
RESISTOR				
R6603	QRV141F-4302AY	MF R	43k Ω 1/4W	F
R6608	QRV141F-6201AY	MF R	6.2k Ω 1/4W	F
R6609	QRV141F-3901AY	MF R	3.9k Ω 1/4W	F
R6610-11	QRV141F-4702AY	MF R	47k Ω 1/4W	F
CAPACITOR				
C6601	QEK C1HM-475GMZ	E CAP.	4.7 μ F 50V	M
C6602	QFLC1HK-123MZ	M CAP.	0.012 μ F 50V	K
C6603	QFN31HK-562ZJ1	M CAP.	5600 p F 50V	K
C6604	QEP61HM-474GMZ	BP E CAP.	0.47 μ F 50V	M
C6605	QEK C1CM-476MZ	E CAP.	47 μ F 16V	M
C6607	QFN31HK-272ZJ1	M CAP.	2700 p F 50V	K
C6608	QEK C1HM-475GMZ	E CAP.	4.7 μ F 50V	M
C6609	QEE61CK-106BZ	TAN.CAP.	10 μ F 16V	K
C6610	QEE61CK-335BZ	TAN.CAP.	3.3 μ F 16V	K
C6611	QEK C1HM-105GMZ	E CAP.	1 μ F 50V	M
C6612-13	QEK C1HM-475GMZ	E CAP.	4.7 μ F 50V	M
C6614	QFLC1HK-473MZ	M CAP.	0.047 μ F 50V	K
C6615-18	QEK C1HM-475GMZ	E CAP.	4.7 μ F 50V	M
TRANSISTOR				
Q6601-03	2SC2785(JH)-T	SI.TRANSISTOR		
I C				
IC6601	CXA1124BS	I.C.(MONO-ANA)		

MODULE PW BOARD PARTS LIST

The following module pw boards are supplied as assemblies.

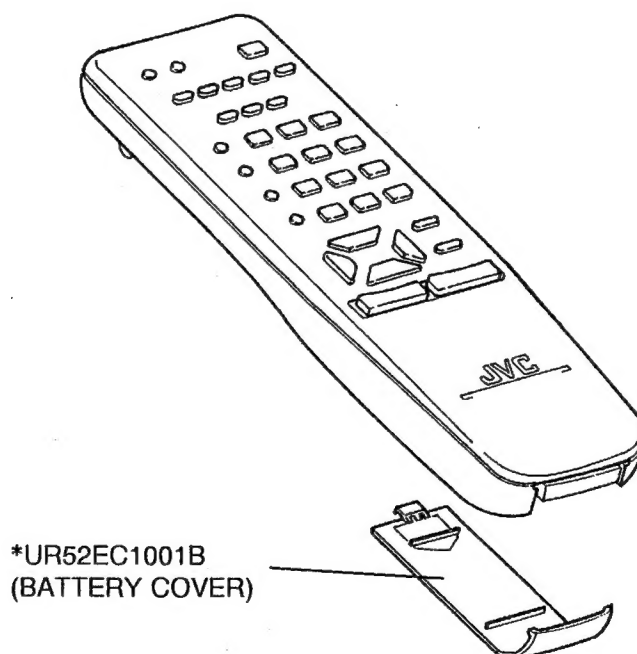
The component parts only the module PW boards are available only when the parts are listed in the "MODULE PRINTED WIRING BOARD PARTS LIST".

IF MODULE PW BOARD ASS'Y (SGX-F006A-H2) with in MAIN PW BOARD ASS'Y. PIP MODULE PW BOARD ASS'Y (SGX-P001A9)

△ Ref.No.	Part No.	Part Name	Description	Local
VARIABLE RESISTOR				
R1022	QVPE605-102H	TRIM.R(TINT)	1k Ω B	
R1023	QVPE605-502H	TRIM.R(COLOR)	5k Ω B	
R1234-35	CEVP005-223XM	CH V R(WHITE BALANCE)	22k Ω B	

CLOSED CAPTION DECODER MODULE PW BOARD ASS'Y (SGXT004A(H2)) with in MAIN PW BOARD ASS'Y.

REMOTE CONTROL UNIT (RM-C671-01-KH)



JVC SERVICE & ENGINEERING COMPANY OF AMERICA DIVISION OF US JVC CORP.

Head office	: 107 Little Falls Road, Fairfield, New Jersey 07004	(201)808-9279
(East Coast)		
Midwest	: 705 Enterprise St. Aurora, Illinois 60504	(708)851-7855
West Coast	: 5665 Corporate Avenue, Cypress, California 90630	(714)229-8011
Southeast	: 1500 Lakes Parkway, Lawrenceville, Georgia 30243	(404)339-2522
Hawaii	: 2969 Mapunapuna Place, Honolulu, Hawaii 96819	(808)833-5828

JVC CANADA INC.

Head office	: 21 Finchdene Square Scarborough, Ontario M1X 1A7	(416)293-1311
Vancouver	: 13040 Worster Court Richmond B.C. V6V 2B3	(604)270-1311

JVC